

Annual
EQUIPMENT ECONOMIES
Number

Cost-saving formula
for bridge repairs

p. 39

March 1959

Railway **TRACK** and

STRUCTURES

Before PRR buys
work equipment

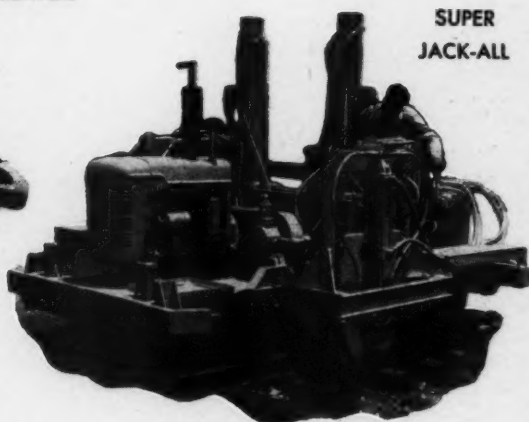
p. 35

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Scarifier, Tie Replacer, and Crib Scarifier**

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**TIE BED
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7 SAFETY FEATURES

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New Geigy Simazine 50W herbicide with the 7 safety features makes possible preventive weed control for railroads—with resultant savings in time, labor, and money.

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TRACK *and* STRUCTURES

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DON'T MISS . . .

Something new in tie-distribution equipment is now in use on the Santa Fe. A traveling unloader, riding atop a string of special cars,

effects the ties on signal from a man riding on a seat attached to side of car. Ties are placed in tiers and fall lengthwise with track.

... in the April issue

MARCH, 1959 5



FAIRMONT

Spot tamper lets one man do the work of four!

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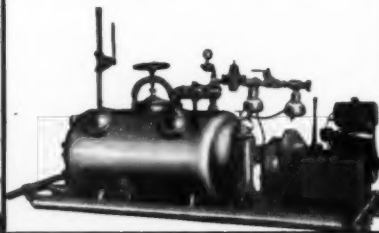
The lightweight, self-propelled unit tamps by air with hydraulic power for accurate control of the guns . . . quickly raises ties up against the rail. The guns

start automatically when lowered, stop automatically when raised. Operators learn to handle the unit quickly and efficiently in a few hours. The W99 can be turned in minutes to work the opposite rail . . . or it can be quickly removed from the track on a portable setoff. All the working parts are easily accessible for maintenance and repair. It's to your advantage to investigate the money-saving features you get from a W99 Series A Spot Tamper.

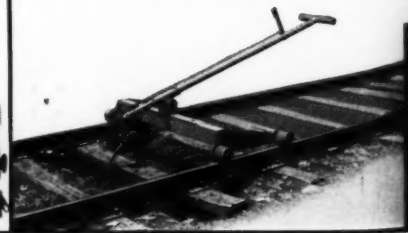
W79 SERIES A SPIKE SETTER CARRIAGE speeds the hand setting of track spikes in rail gangs. Convenient supply bin, efficient working position.



W65 SERIES A GROUTING OUTFIT eliminates water pockets and soft spots in road bed. Mixing unit shown. Items easily transported.



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50
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Helps from Manufacturers

The following compilation of literature—including pamphlets and data sheets—is offered free to railroad men by manufacturers to the railroad industry. To receive the desired information, write direct to the manufacturer.

RAIL ANCHORS. A folder is available which describes and illustrates the Reliance Rail Anchor. The 4-page folder explains how the design of the anchor enables it to perform its function in the track. Steps required for its proper application against the tie plate are shown and described. Data giving the holding power of the Reliance Anchor, as shown by tests, are also included. (Write: *Moore & Steele Corp., Dept. RTS, Owego, Tioga county, N. Y.*)

SURGE RELIEF VALVE. Bulletin W-2-A describes and illustrates the Golden-Anderson "Cushioned" surge relief valve. The 8-page bulletin tells how the valve is installed and how it operates to protect water lines against over-pressures in the system. Other information includes suggested installation arrangements and relief valve capacities, detailed drawings and suggested specifications. Brief descriptions are given of other valves the company has available. (Write: *Golden-Anderson Valve Specialty Company, Dept. RTS, 1246 Ridge Ave., Pittsburgh 33, Pa.*)

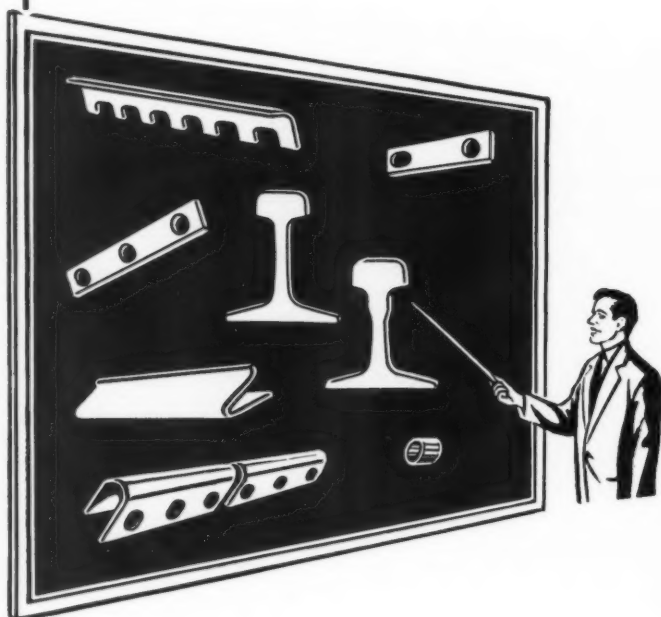
RAILROAD FORGINGS. A 28-page pocket-sized catalog is available that describes and illustrates upset forged products which are used on railroads. Included are forgings that are used for maintenance of way, rolling stock and bridge construction and repair. Items covered in the maintenance of way field are gage rods, frog and crossing bolts and timber and drift bolts. Also covered are steel supports for tunnels, fluid power controls and the company's facilities for producing custom railroad forgings, stampings and weldments. (Write: *Commercial Shearing & Stamping Co., Dept. RTS, Youngstown, Ohio.*)

METALLIZING. The Metco Metallizing Systems are described and illustrated in Bulletin 93XG. Pointed out are the advantages of applying the coatings to metal surfaces for protection against oxidation. General recommendations for the use of each system are given. Typical applications of the product are shown and described. (Write: *Metallizing Engineering Co., Inc., Dept. RTS, 1101 Prospect Ave., Westbury, L. I., New York.*)

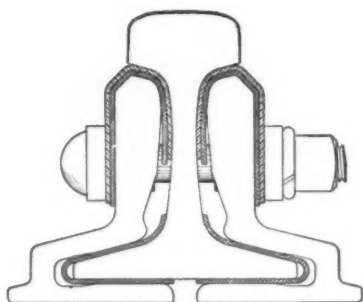
RIP TRACK JACK. A four-page bulletin is available which describes the new Whiting Adjustable Ripjack. The bulletin, RJ-C-100, points out the features of the jack and shows how its lateral movement allows cars of any width to be serviced. Included is a suggested method of utilizing the Whiting Trackmobile in combination with the adjustable Ripjack for handling bad-order cars. (Write: *Whiting Corporation, Dept. RTS, 157th and Lathrop Ave., Harvey, Ill.*)

AIR DUMP CARS. A new folder is available which describes and illustrates the Magor air dump cars. The advantages of using the cars are given as well as the results of a study that was made among seven major railroads relative to the cost of replacement parts over an average period of 29 years. Seven features of the cars are described and illustrated. Also pictured are other types of cars that the company manufactures. (Write: *Magor Car Corporation, Dept. RTS, 50 Church St., New York, N. Y.*)

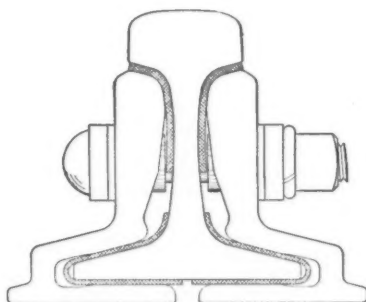
CUTTING EDGES. An 8-page booklet entitled "Proof of the Difference" points out the advantage of the Caterpillar scraper and dozer edges. The two-color booklet, DE853, describes and illustrates the processes used in the manufacture of the edges from hot-rolling of the steel, through heat treatment, design and quality-control measures. High-alloy router bits and bulldozer end bits are also included, as are "special-application" edges. Statements from several contractors give the advantages they gained by using these edges. (Write: *Caterpillar Tractor Company, Advertising Division, Dept. RTS, Peoria, Ill.*)



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ATLANTIC COAST LINE—**J. B. Styles**, assistant engineer of statistics at Wilmington, N. C., has been promoted to engineer of statistics there, succeeding **J. L. Willcox** who has retired after 44 years of service with this company.

BALTIMORE & OHIO—**Howard E. Exley**, assistant to general manager, Eastern region, at Baltimore, Md., and formerly engineer maintenance of way, has retired after 44 years of service.

CANADIAN NATIONAL—**A. R. Penney**, division engineer at St. John's, N. F., has been promoted to the newly created position of district engineer, Newfoundland district. **Aubrey L. Bates**, assistant division engineer at St. John's, has been promoted to assistant district engineer, Newfoundland district.

CANADIAN PACIFIC—**W. M. Price** has been appointed assistant division engineer, Montreal Terminals, succeeding **J. H. Morrish**, transferred.

DENVER & RIO GRANDE WESTERN—**Frank Chiodo**, roadmaster at Grand Junction, Colo., has been transferred to Helper, Utah, succeeding **J. B. Treat**, who, in turn, has been transferred to Grand Junction.

FRISCO—**R. E. Nichols** has been appointed assistant general foreman bridges and buildings and water service at Enid, Okla.

ILLINOIS CENTRAL—**P. F. Gotch**, section foreman on the Chicago Terminal division, has been appointed supervisor of track on the Iowa division at Freeport, Ill., succeeding **E. E. Brown**, who has been transferred to Waterloo, Iowa. Mr. Brown succeeds **B. M. Underwood**, who has been transferred to the Chicago Terminal division, with headquarters at Chicago, succeeding **C. H. Prater**, deceased.

MILWAUKEE—**G. W. Hawkins**, section foreman at Lake, Wis., has been promoted to roadmaster at Green Bay, Wis., succeeding **W. F. Weiland** who has been promoted to trainmaster-roadmaster on the Milwaukee division, third district, with headquarters at Horicon, Wis.

NORTH WESTERN—**Robert R. Lawton**, assistant engineer, Terminal division, has been promoted to staff engineer in the office of the engineer of maintenance, Chicago, succeeding **F. W. Bone**, resigned.

PENNSYLVANIA—**H. R. Davis**, supervisor track at Cleveland, Ohio, has been transferred to Philadelphia, Pa. **W. A. Thum, Jr.**, has been appointed acting supervisor track at Reading, Pa.

READING—**Richard C. Smith**, assistant engineer of buildings, has been promoted to engineer of buildings with headquarters at Philadelphia, as before, succeeding **C. L. Winkench**, retired.

ROCK ISLAND—**Harry E. Strate**, construc-

tion engineer on new line work south of Des Moines, Iowa, has been promoted to division engineer at Des Moines succeeding **C. U. Kitzmiller** who has been transferred to Rock Island, Ill. Mr. Kitzmiller succeeds **C. E. Fleetham** who has been appointed district bridge and building supervisor at El Reno, Okla., succeeding **Paul E. Strate**. Mr. Strate has retired after 40 years service.

R. B. Stone has been appointed master carpenter at Fairbury, Neb., succeeding **C. E. Patterson** who has been transferred to Rock Island. Mr. Patterson succeeds **J. E. Freeman** who has been appointed district bridge and building supervisor there.

UNION RAILROAD—The following appointments have been made: **J. R. Shafer** as assistant to chief engineer; **A. C. Danks** as engineer bridges and buildings; **H. A. Talbott** as assistant engineer bridges and buildings; **R. W. Preisendorfer** as assistant engineer of track; **S. S. Boyd** as roadmaster; **J. W. Turner** as assistant supervisor—work equipment; **M. Rougas** as assistant supervisor—system gangs; **D. R. Schenck** and **G. E. Fischer** as assistant supervisors.

Biographical briefs

William S. Broome, 65, who recently retired as assistant chief engineer of the Colorado & Southern at Denver, Colo. (*RT&S*, Jan., p. 10), was born at Saint Jo, Montague county, Tex. He graduated from Texas Agricultural and Mechanical College in 1914 with a Bachelor of Science degree in civil engineering and in 1936 received a professional degree in civil engineering. Mr. Broome commenced his railroad career in 1914 as a rodman on the Southern Pacific. The following year he joined the Santa Fe as a draftsman, later advancing to office engineer and transitman engaged on valuation, location and construction work. The first eleven months of 1918 he spent in service with the Army and Navy at the Forest Products Laboratory at Madison, Wis., engaged in airplane design and research.

In December 1918 he joined the Burlington Lines as assistant engineer on the Colorado & Southern. He subsequently served as office engineer, division engineer, locating

engineer, construction engineer and engineer maintenance of way prior to his promotion to assistant chief engineer.

H. B. Christianson, Jr., 37, who was recently promoted to assistant to vice-president-operations of the Rock Island at Chicago (*RT&S*, Jan., p. 10), was born at Beloit, Wis., and graduated from the University of Illinois in 1943 with a Bachelor of Science degree in civil engineering. In 1953 he received a Master of Science degree from the Massachusetts Institute of Technology. Mr. Christianson began his railroad career in 1937 by working summers for the Milwaukee Road. He returned to the Milwaukee on July 29, 1946, after military service in World War II, as instrumentman at La Crosse, Wis. On August 1, 1949, he joined the Santa Fe as assistant engineer at Chicago. Mr. Christianson entered the service of the Rock Island on May 17, 1954, as division engineer at Des Moines, Iowa. He was promoted to assistant chief engineer at Chicago the following year, which position he held until his recent promotion.

Jack E. Eiseemann, 49, who was recently promoted to chief engineer of the Western Lines of the Santa Fe at Amarillo, Tex. (*RT&S*, Jan., p. 10), was born at St. Paul, Minn., and received his higher education at the University of Illinois. Mr. Eiseemann first entered railroad service in 1928 with the Rock Island, serving as flagman, chainman, rodman and instrumentman in Missouri and Texas. In November 1931 he left the Rock Island and became assistant superintendent on highway bridge construction in Illinois. Subsequently he served with the Civilian Conservation Corps in Illinois, and as field engineer for the San Joaquin Light & Power Co. in Fresno, Calif. He returned to railroading in 1935 with the Santa Fe as a rodman, later serving as draftsman and transitman. During World War II he served in the U.S. Army Transportation Corps in Europe on railroad track and bridge reconstruction. He also served as chief engineer for all railroads in the United States Zone in Germany. Returning to the Santa Fe in March 1947 he was appointed roadmaster at Prescott, Ariz. Mr. Eiseemann was promoted to division engineer on the Gulf, Colorado & Santa Fe at Temple, Tex., in November 1950 and to district engineer at Galveston the following year. He was appointed district engineer on the Santa Fe in June 1955, the position he held until his recent promotion.

Howard E. Exley, 65, who recently retired as assistant to the general manager, Eastern region, of the Baltimore & Ohio at Baltimore, Md. (announced elsewhere in this issue), was born at Wheeling, W. Va., and attended Washington and Jefferson College, graduating in 1915. He entered the service of the B&O the same year in the construction department at Holloway, Ohio, transferring the following year to the engineering

(Continued on page 78)



H. B. Christianson, Jr.
Rock Island



William S. Broome
C&S

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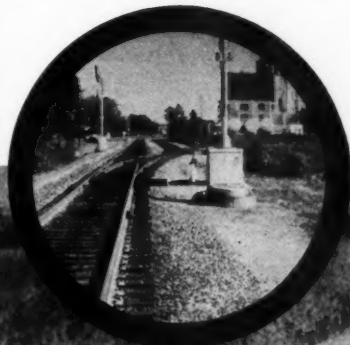
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accomplished for as
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News notes...

RAILWAY

TRACK and STRUCTURES

... a résumé of current events throughout the railroad world

Railroad management has recommended to Congress a 5 per cent increase in railroad retirement benefits as a counterproposal to the 10 per cent increase sought by labor. The tax would be applied to \$400 of an employee's monthly earnings instead of \$350. If adopted, management's proposal would raise retirement taxes to 13 1/2 per cent, half to be paid by the railroads and the other half by employees.

Leaders of operating labor unions were asked on February 11 by AAR's President Daniel P. Loomis to join him and other railway executives in requesting President Eisenhower to name a non-partisan group of distinguished citizens to study the problem of featherbedding. This practice, he said, "gnaws insidiously at our competitive position and ultimately destroys the very jobs it seeks to protect." Pointing out that a three-year-old agreement to postpone revisions in working rules expires on October 31, President Loomis urged that the special commission be appointed immediately.

In response to this appeal, a recent press release of the Railway Labor Executives Association states that "the alleged 'featherbedding' problem simply does not exist" and that railway labor productivity has been rising steadily in recent years. "All that Mr. Loomis has done," the RLEA release continues, "is to give organized labor a little advance notice that it has a hard fight on its hands when the present three-year contract expires."

A suggestion that the rail industry consider the mutual-aid strike pact recently entered into by six major air lines and approved by the Civil Aeronautics Board was made by Russell Dearmont, president of the Missouri Pacific. "Since we negotiate on an industry-wide basis," he said, "certainly labor must recognize the right of the industry to mutually aid one another of its members."

Federal funds for air-line terminal buildings are opposed by President Eisenhower. Pointing out that the federal government did not build the terminals for either the railways or the buses he sees "no reason for doing it for the air terminals." It was his opinion that federal investment in air facilities should extend only to improving the safety of flying. It's up to local communities, he continued, to provide such extra refinements as a "nice, lovely administration building."

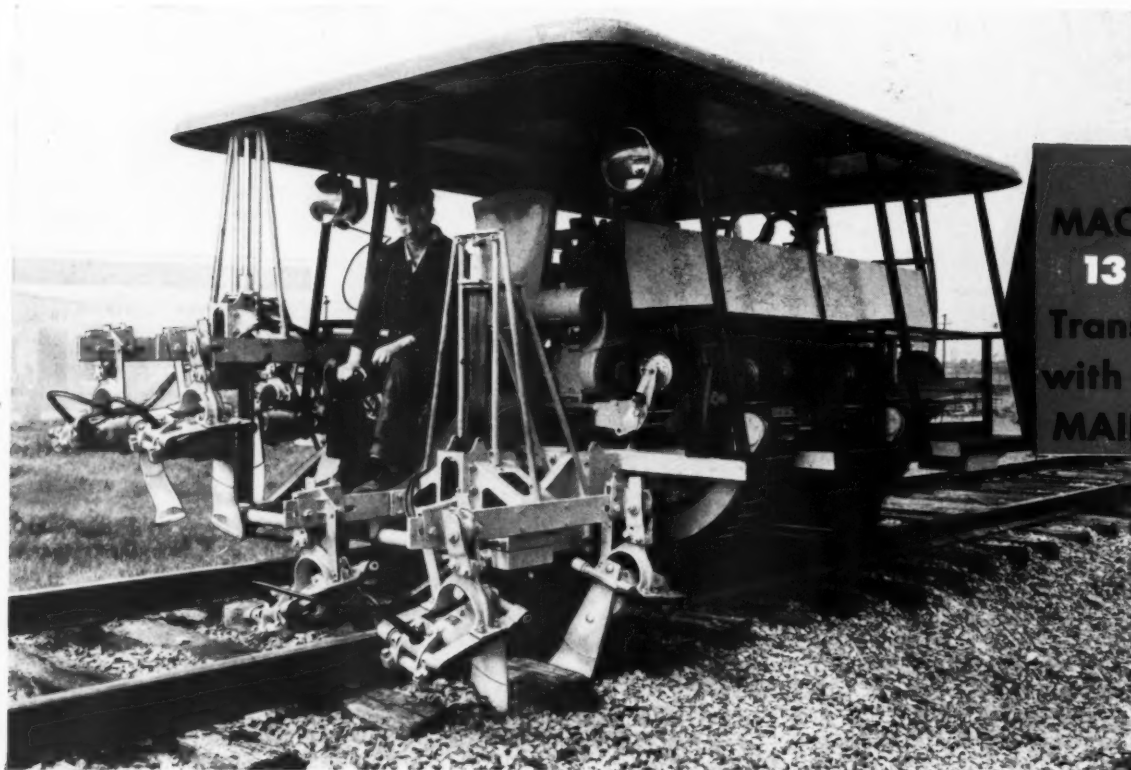
In a precedent-setting decision, the ICC has ruled that, in its interpretation of the 1958 Transportation Act's service-abandonment provision, it lacks power to require that abandonment plans include arrangements for the protection of employees. This decision was the result of a case where the Great Northern wanted to discontinue a single-unit passenger train operating between Williston, N.D., and Richey, Mont., where four jobs—those of the engineer, conductor, baggage-man and brakeman—were affected. The commission said that Section 13a of the Interstate Commerce Act is "clear and unambiguous as to conditions under which railroads may discontinue trains or ferries, and there is no warrant in the law for imposition of additional conditions or restrictions by us."

Repeal of the 1958 Transportation Act's service-abandonment provisions is proposed in a bill introduced in the House by Representative Osmer of New Jersey. He was one of two representatives who voted against the Act.

NEW CONCEPT IN TRACKS

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Greatly Lowers Maintenance Costs



A COMPLETE UNIT—all three machines (or other equipment) are housed in Main Car.

RAPIDLY REMOVED FROM TRACK by Crawler Set-Off . . . in a matter of seconds.

POWER DOWNFEED OF INDEPENDENT WORKHEADS . . . operates easily.

HYDRAULIC PROPULSION . . . the Main Car travels up to 25 MPH.

THESE HYDRAULIC MACHINES are easily loaded on or unloaded from Main Car, by hydraulic Tail Rack.

LOOK WHAT THE MULTI-GANG WILL DO:

surface • line track • pull spikes without bending • remove or insert ties • torque controlled bolting • drills rail
MULTI-GANG'S Main Car is 171" long x 113" wide x 84" high.

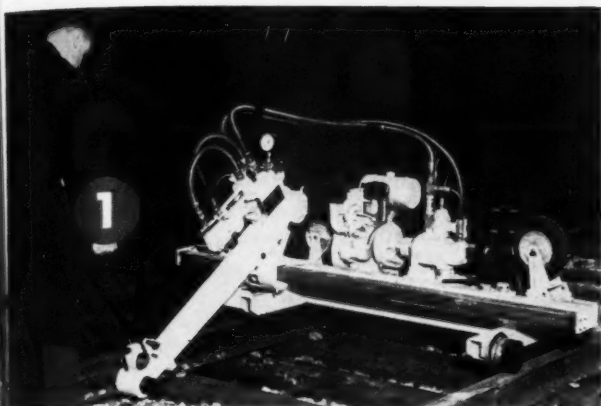
TAMPER MULTI-GANG PACKAGE UNIT

consists of:

Main Car with Power Downfeed Tampers and Crawler Set-Off
Hydrillbolter
Spike Hydjector—Tie Hydrenower
Combolineer

MULTI-GANG UNIT EXTENDS THE TRACK SECTION

SECTION MAINTENANCE



HYDRILLBOLTER* (Model BD)

Combination Bolter and Rail Drill

Hydraulic Transmission

Minimum Mechanical Replacement Parts

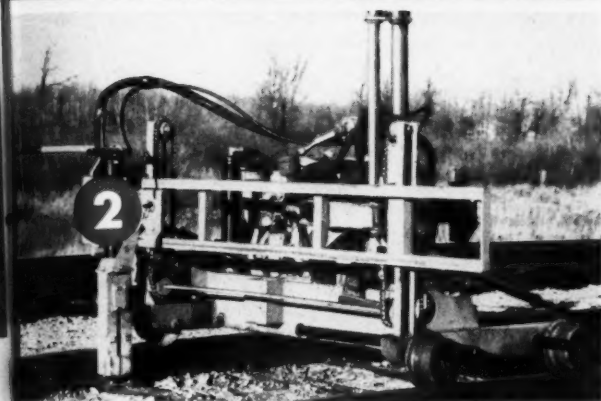
BOLTER

- single control lever, manned by one operator
- automatic change from high speed, low torque, for 'running up' nuts to low speed, high torque for nut tightening
- handles nuts on either side of both rails

DRILL

- drill attachment adapted in less than 2 min.
- manned by one operator
- easily adjusted for different rail sizes
- drill bits quickly interchanged

HYDRILLBOLTER can be removed from track by two men.



SPIKE HYDREJECTOR*

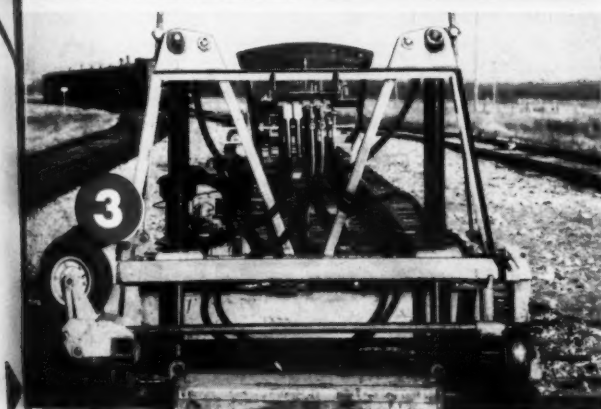
TIE HYDRENEWER* (Model PR)

Combination Spike Puller and Tie Renewer

pulls spikes without bending • lightweight • completely hydraulic • easily operated by one man.

Tie Renewer is adapted to Spike Puller in seconds
No disturbance of track line or surface
Renews without digging out tie ends

Removed from track by one man.



COMBOLINER* (Model JL)

Combination Powered Jack and Track Liner

powerful • lightweight • compact

- 10,000 lbs. thrust to throw the track in either direction
- simply insert lining anchors and slide out wheels to line the track
- lifts track to 10 inches, rail dogs engage automatically
- turntable allows easy pivoting
- cross level indicator reads directly in inches of elevation
- no wheels, axles to interrupt view of rails

Easy to remove from track.

ORGANIZE . . . MECHANIZE . . . ECONOMIZE with MULTI-GANG

For full information, contact

Tamper
LIMITED
RAILWAY DIVISION

Head Office and Plant:

160 ST. JOSEPH STREET, LACHINE, MONTREAL 32, CANADA

25 Faulkland Avenue
Scarborough, Ontario

2281 Portage Avenue
St. James
Winnipeg, Manitoba

P. O. Box 459
Vancouver, B.C.

* Patents Pending

Dear reader:

What it means to be machine-minded

We can now say without danger of contradiction that mechanization of railroad M/W work has reached an extremely high state of development. Machines are available to perform practically every major task encountered in the maintenance and repair of tracks and structures. They are, moreover, dependable machines that can be counted on to do a good job.

This, of course, doesn't mean that the peak of mechanization has been reached. Further improvements can be expected in the machines now available, and entirely new machines will be making their appearance from time to time. However, while no one will claim that all technological problems have been solved, it is apparent that a sound base has been established.

We might say, then, that for all practical purposes the maintenance man and his colleagues among the manufacturers have mastered the technological phase of the problem of mechanization. That's fine, but there are other, and perhaps even more important, aspects to be considered if we are to get the most out of machinery. If this end is to be attained the machine has to be used with maximum effectiveness and it has to operate with maximum efficiency with a minimum of lost time due to mechanical failures.

Has the maintenance man mastered the problems encountered in getting these results? Are his machines generally being run by competent, well-trained operators who know how to handle the units assigned to them and how to get the most out of them? Has he been successful in setting up a system of inspecting and repairing machines that provides reasonable insurance against breakdowns in the field? Are his machines assigned and used in such manner that they are producing the largest possible return on the investment?

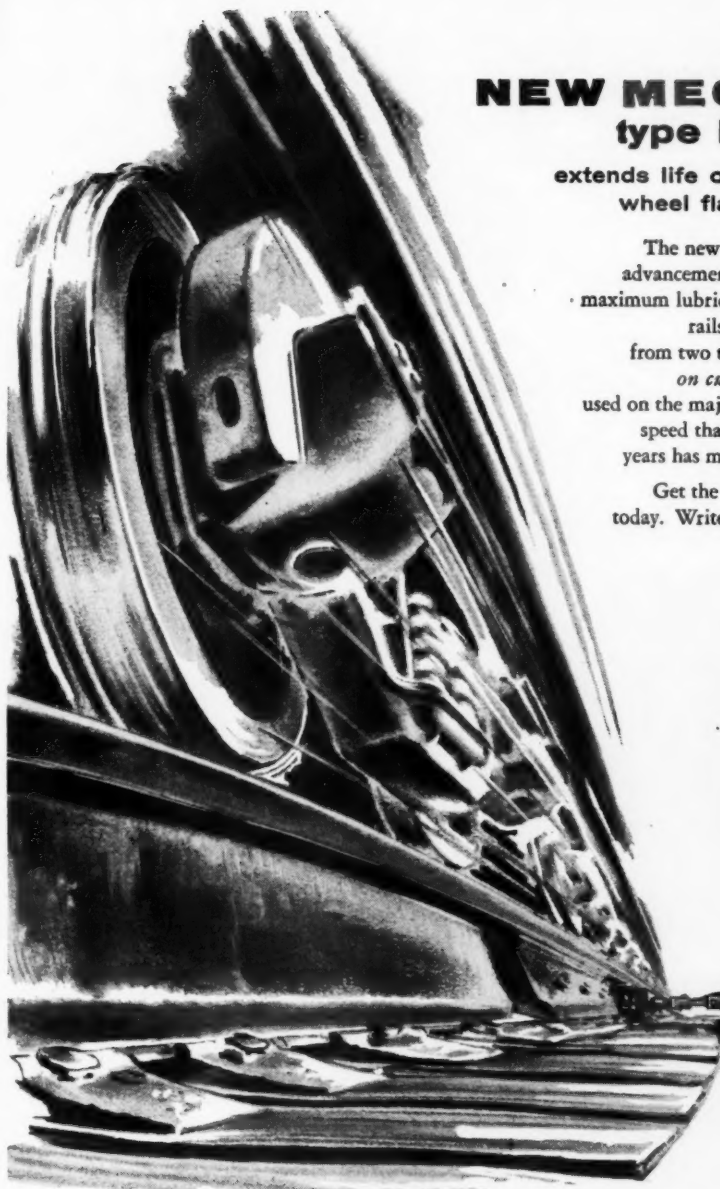
Observations indicate these questions can't always be answered in the affirmative. And these observations are confirmed by comments of machinery manufacturers (page 42), some of whom seem to feel that all roads are not doing the best job possible.

Recognition of this state of affairs doesn't necessarily carry an implication of criticism. In view of the rapid growth of mechanization it would indeed be surprising if the railroads had brought to complete perfection the art of using the machine to best advantage. They have swallowed a large bite and what they have swallowed must be digested and that will take time.

Part of the problem lies in a state of mind. Before the machine could be applied in maintenance work on a large scale it was necessary for maintenance men to achieve a receptive attitude toward it. In other words, they had to become machine-minded.

Being merely machine-minded in this sense isn't enough these days. What is necessary now is a full realization of the importance of the proper care, use and operation of machines. Only then can it be said that one is truly machine-minded. For optimum results this spirit must permeate the entire M/W organization, starting at the top and proceeding down through the ranks to the machine operators. Admittedly an intensive program of education would be required, but the results would be worth it.

MHD

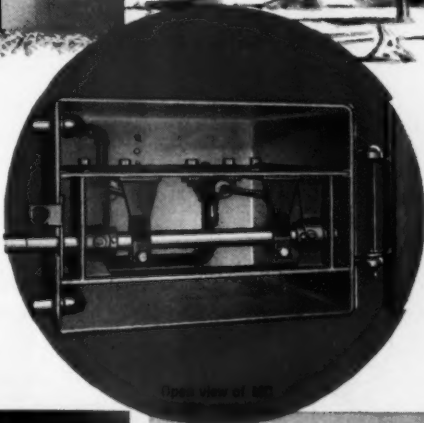
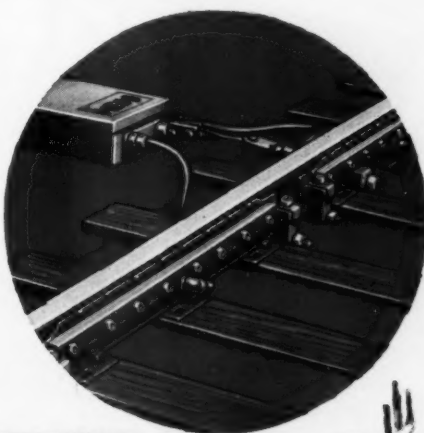


NEW MECOLUBRICATOR type MC for curved rails . . .

extends life of curved rails and locomotive
wheel flanges two to four times!

The new Mecolubricator Type MC incorporates engineering advancements throughout its construction . . . Designed to give maximum lubrication on curved rails and thereby extend the life of rails, as well as the life of the locomotive wheel flanges, from two to four times . . . the type MC *permits higher speeds on curves with safety and assurance.* Mecolubricators are used on the majority of railroads . . . The savings in time, labor and speed that have resulted from their use in the last twenty-five years has more than proven their value to the railroad industry.

Get the complete facts on this new and improved lubricator today. Write for complete descriptive bulletin and prices . . .



NEW AND IMPROVED FEATURES INCLUDE:

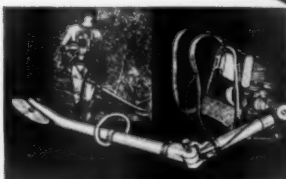
- Greatly Increased lubricant capacity.
- Two independent pumps distribute grease to wiping bars.
- Grease flows more freely through enlarged slots in wiping bars.
- Completely new actuating mechanism—has fewer moving parts and easier adjustment.

★ Maintenance Equipment Company ★

Division of Peor and Company
RAILWAY EXCHANGE BUILDING • CHICAGO 4, ILLINOIS



MACK REVERSIBLE SWITCH POINT PROTECTOR
Prolongs the life of switch points about 4 times; then is reversed and again extends the switch point life for another similar period.



BRUSH CUTTER
Cuts right-of-way maintenance costs. One operator can do the work of eight men using brushhooks or scythes. Extreme maneuverability.



MECO POWER RAIL LAYER
Reduces labor cost to minimum in laying Standard Rails, Long Rails, Continuous Welded Rail. Requires a machine crew of only 3 or 4 men.

R-395R



BALLAST CLEANING

*Just Ask the Railroads
That have used*

SPENO

BALLAST CLEANING



SPENO

RAIL GRINDING



The repeat business
which we have enjoyed
through the years
proves the value
of our service and
prompts our slogan.

*Just Ask
the Railroads
That have
used us!*



FRANK SPENO RAILROAD BALLAST CLEANING CO., INC.

306 North Cayuga St., Ithaca, N. Y.

RAIL GRINDING



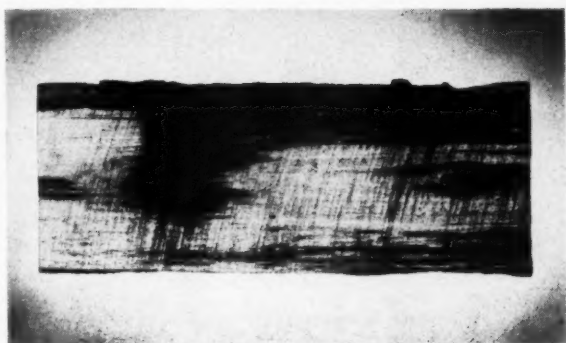
see
the
difference



made by

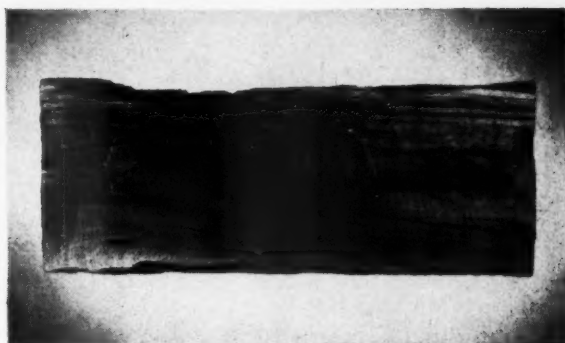
BIRD

SELF-SEALING TIE PADS



SOUND WOOD AFTER 15 YEARS OF BIRD TIE PAD PROTECTION

This tie, installed in 1926, was protected by Bird Self-Sealing Tie Pads from 1942 to 1957. It was then removed from track and slabbed for exhibition purposes. See how the Bird Tie Pad is still securely sealed to the tie after 15 years. Note the soundness of the wood in the under-plate area.



COSTLY DETERIORATION IN UNPROTECTED TIE

This tie, also installed in the same track in 1926, was not protected by Bird Self-Sealing Tie Pads. When the tie was removed and slabbed for exhibition purposes in 1957, it had been seriously damaged by moisture and abrasive wear. The deterioration in the tie plate area is especially noticeable.

Bird Self-Sealing Tie Pads are the *only* tie pads whose durable and effective seal with the tie has been proved by years of in-track service. For additional proof of dollar savings, send for free booklet to Bird Tie Pads, East Walpole, Mass., Department HTS

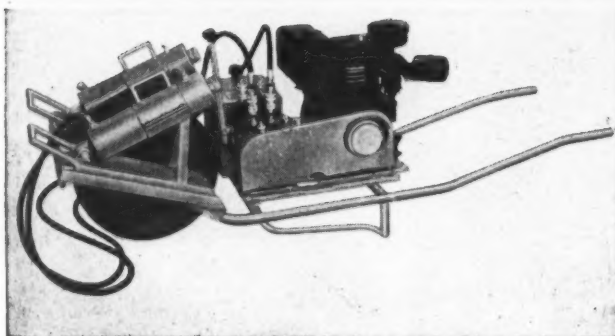
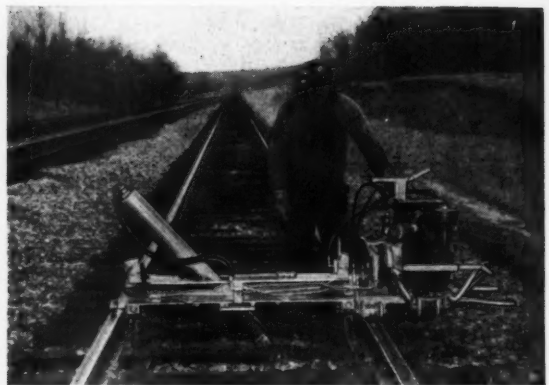
Bird Self-Sealing Tie Pads are Recommended for:

BRIDGE DECKS • CURVES • SWITCH TIES • HIGHWAY GRADE
CROSSINGS AND OTHER PAVED AREAS • CROSSING FROGS •
INSULATED JOINTS • WITH SMALLER TIE PLATES • FILE CUTOFFS •
THROUGH-STATION PLATFORMS • OUT-OF-FACE INSTALLATIONS
IN RAIL-LAYING PROGRAMS • SANDY LOCATIONS • ALL OTHER
AREAS WHERE TIE LIFE IS SHORT OR REPLACEMENT COSTS HIGH.

Buy the Best



Buy Bird



RTW HYDRAULIC TRACK LINER

**More track lined per hour with
Minimum effort and expense**

The RTW Hydraulic Track Liner—Model P-O—was devised and designed by railroad engineers thoroughly familiar with maintenance of way problems.

A light rigid self contained attachment with double flanged rollers used with the P-O Track Liner adjusts to any height or weight of rail. It supports a portable air-cooled 8 horsepower gasoline driven engine. This power plant can be used with two hydraulic rams for lining thru switches, road crossings, etc., as well as supplying power for the attachment for out-of-face lining. Its light weight and portability reduces operator fatigue.

Railway Trackwork Co.

3207 KENSINGTON AVE., PHILADELPHIA 34, PA.

Agents: Spokane—Franco Bryan Inc. • Louisville—T. F. Going • Norfolk—Robert L. Nutt, Jr. • Omaha—Roth Railway Supply • St. Louis—Clarence Gush • San Antonio—H. W. Lewis Equip. Co. Canada: Lindsey, Ontario—Sylvester Distributors • Winnipeg—Kane Equip. Ltd.

Upper left—Model P-O gasoline engine powered Hydraulic Track Liner operating two hydraulic rams.

Upper right—Model P-O gasoline engine powered Hydraulic Track Liner operating attachment with double flanged track rollers, adjustable for any height and weight of rail.

Lower left—Model P-O gasoline engine powered Hydraulic Track Liner and two hydraulic rams mounted on wheelbarrow type frame that can easily be operated or transported by one man.

Lower right—Model H-O Hydraulic pump, light weight, hand operated, that will supply power for one (as shown) or two rams. Ideal for small gangs.

This equipment is also available mounted on a wheelbarrow type frame that can be transported by one man for use in heavy traffic areas.

The hand operated hydraulic pump, available with either one or two hydraulic rams, is ideal for spot lining with small gangs.

The interchangeable units of these highly portable power operated Hydraulic Track Liner combinations afford a smaller force, the equipment necessary to do the work that normally would require heavier oversized machines and a large crew.

Write for complete details today

TRACK MAINTENANCE MACHINERY

Switch Grinders • Cross Grinders • Surface Grinders • Rail Drills
Bit Sharpeners • Tie Nippers • Grinding Wheels • Track Liners
Cross Cutters • Tie Handlers

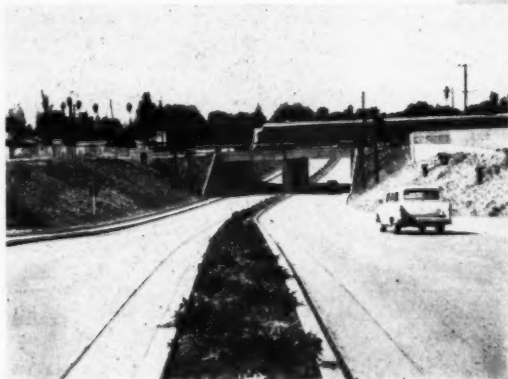
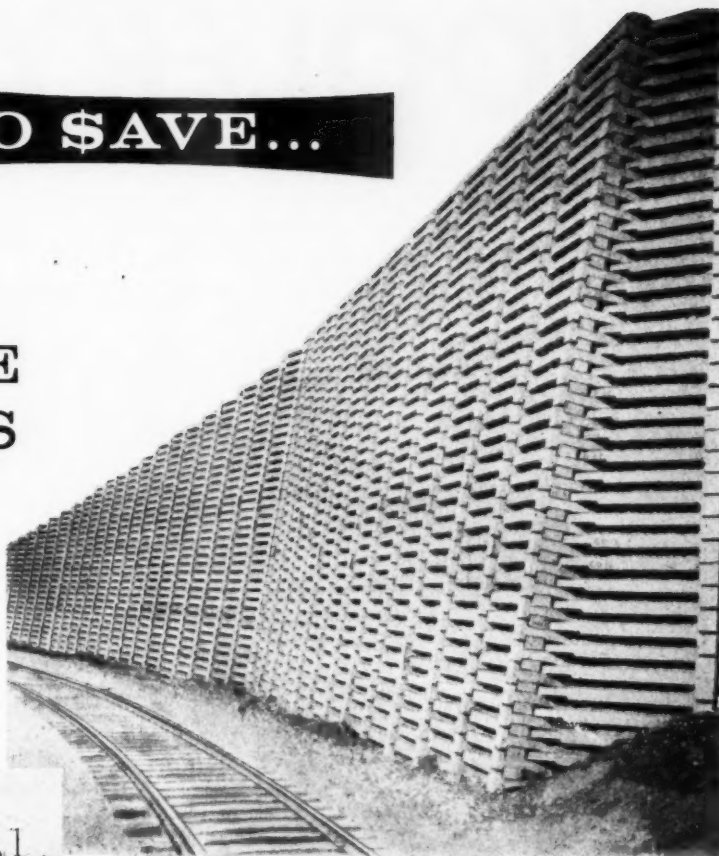
3 WAYS TO \$AVE...

with

PRECAST CONCRETE PRODUCTS

CRIBBING

Concrete crib walls, because of their economy and adaptability, are the permanent answer to most retaining wall problems. Architecturally pleasing too.



PRESTRESSED RAILROAD BRIDGES

Precast maintenance-free Amdek bridge beams are made under factory controlled conditions, delivered on schedule, erected quickly with minimum traffic tie-up.

CULVERT PIPE

Concrete culvert pipe is permanent. Available in the shape, size and strength required. Has superior hydraulic properties.



AMERICAN-MARIETTA COMPANY
CONCRETE PRODUCTS DIVISION

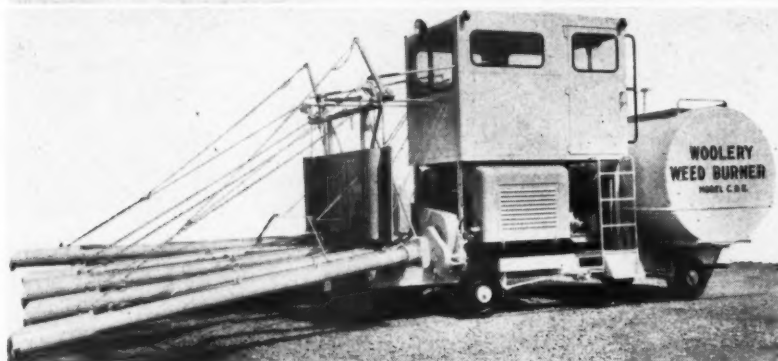
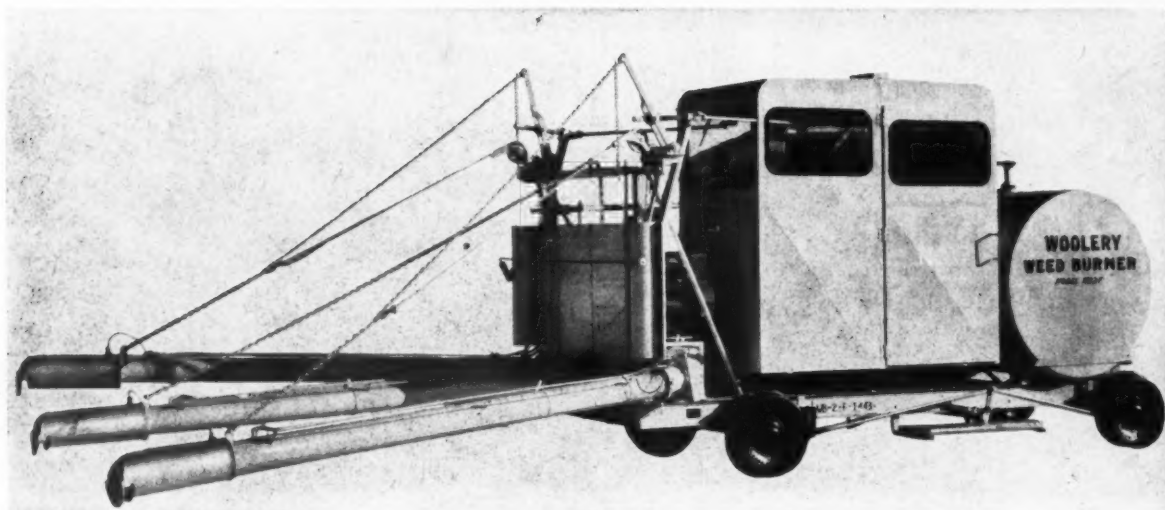
GENERAL OFFICES:

AMERICAN-MARIETTA BUILDING

101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS, PHONE: WHITEHALL 4-5600

WOOLERY

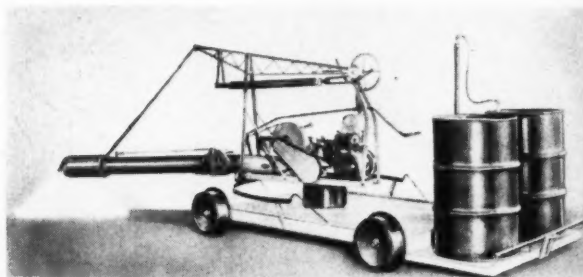
FOR LOW COST
TRACK MAINTENANCE



WEED BURNERS

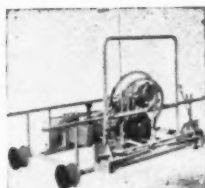
The model WB-2-F (above) has automatic transmission with torque converter; constant blower speed regardless of rate of travel; an all steel cab with safety glass, two entirely separate brake systems and a final drive with chains and sprockets located outside the wheels for easy adjustment. A separate 15-H.P. air-cooled engine is used to drive the blower. Thus when speed is reduced—such as is necessary in yard or snow melting work—the blower speed maintains the same rate and heat intensity.

The model COE (above) makes use of a torque converter on the propelling engine which gives any speed desired for burning or dead-heading. It burns to a width of 25 feet using all five burners. If desired, a second trip can be made with the two outer arms extended to an additional width of five feet on each side. Burners are under separate and instantaneous control of the operator. The two outer arms can be raised or lowered or can swing in or out to coincide with the contour of the ground. Other Woolery Burners include the Model PB-B, 3 burner portable and the AB single burner portable (shown at right).

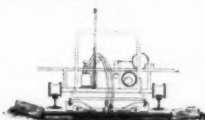


TIE CUTTERS - TIE-END REMOVERS

The Woolery Tie Cutter is a sturdy, light-weight machine that replaces ties with a minimum amount of disturbance to line or surface of the track. A reciprocating saw blade cuts the ties just inside the tie plate on both sides. The center piece is pried out and the Woolery Tie End Remover pushes the ends out thru use of a double-acting, double-ended hydraulic cylinder.



A simple turn of the valve handle causes the two tie ends to be pushed completely clear of the rail.



SPIKE DRIVERS



The Woolery Spike Driver is designed primarily for use by tie renewal gangs. Various other pneumatic tools can also be operated with it. Rubber-tired set-off wheels.

WOOLERY MACHINE COMPANY
29th and Como S.E., Minneapolis, Minn.

10 million cars, 10 thousand trains and still no maintenance

Curbing the high maintenance costs of this bustling crossing was a headache to a major Northeastern railroad. For these tracks take a double-barreled pounding—from traffic feeding into a nearby thruway as well as the daily flood of cars in and out of the nearby factory parking lot.

Then the G.T.M.—Goodyear Technical Man—suggested a rubber railroad crossing—developed for just such tough service. The installation was made in September 1956.

Already a proved money saver, these steel-reinforced

rubber pads continue to rewrite the book on RR maintenance. There's absolutely no sign of punishment from the estimated 10 million cars and 10,000 trains that have crossed them. *Yet no one's done any work on the railroad here in better than 2 years—there's no maintenance need even remotely in sight.*

If you're looking for real economies like these in the care of rail crossings—highway or interplant—why not try the G.T.M.? For details, write Goodyear, Industrial Products Division, St. Marys, Ohio, Los Angeles 54, California, or Akron 16, Ohio.

GOODYEAR INDUSTRIAL PRODUCTS

 **-Specified**

Molded Rubber Railroad Crossing Pads



A Thick pad of solid, tough stock for excellent resistance to cutting, wear, weather and low temperatures

B Heavy-gauge steel plate reinforcement follows contour of corrugated pad bottom

C Tough integral flanges seal tightly against tracks when pad is sprung into place



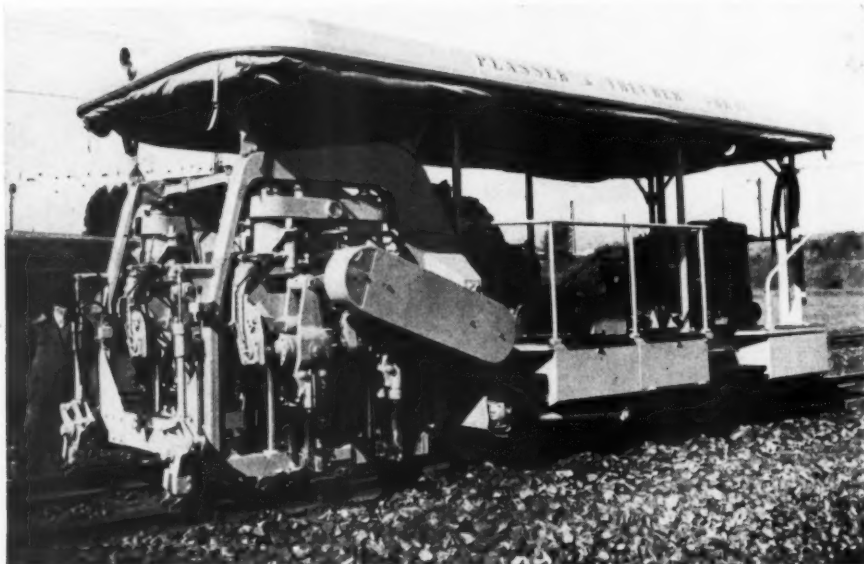
RUBBER RAILROAD CROSSINGS BY

GOOD YEAR

THE GREATEST NAME IN RUBBER

PLASSER CUTS YOUR TRACK THESE 4 WAYS!

***MECHANIZED SPEED-UP PUTS TRACK
MAINTENANCE ON STOP-WATCH EFFICIENCY!***



THE PLASSER "NONSYNCHRON" SUPER TAMPER VKR 03

- Always packs ballast uniformly.
- Also packs obliquely placed ties and switches.
- Automatically increases pressure under double sleepers.
- Shifts to normal or depth tamping during the operation.
- Only one man operates the machine.
- Travelling speed is 31 m.p.h.
- Its two brakes work independently.
- Its tie-indexer is automatic.
- Packs ballast between ties.
- Capacity is up to 1770 feet per hour.
- You take it off the track in less than 90 seconds.



NEW VERTICAL CRIB TAMPERS

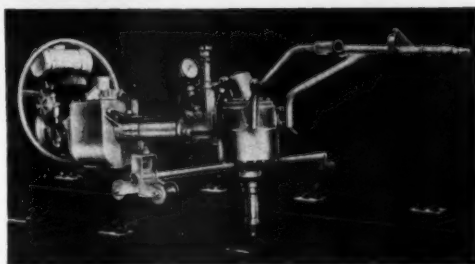
- Two hydraulically raised and lowered lever arms are fitted to the tamper with vibrators.
- Condenses ballast in the cribs simultaneously with the tamping work.
- Condenses and spans ballast by vibrations connected with the pressure.

MAINTENANCE COSTS . . .



SHOULDER BALLAST MAINTAINER SV 52

- Various purpose machine
- Ballast distributor
- Ballast shoulder cleaner
- Profiling device
- Produces edge paths or drainage ditches
- A vibration-screen removes rubbish.
- Working speed infinitely variable from 260 feet/hour up to 5850 ft./hr.
- All operations are centrally controlled from the operator's platform.
- Has full hydraulic drive.



POWER TRACK WRENCH P12

- Full hydraulic, infinitely variable drive
- Small weight
- Small dimensions
- Exactly adjustable torque
- No stripping and overtightening of screws.
- Connection for flexible shaft for driving the accessories (drilling devices, grinding disks, etc.)

ERWIN W. KLOSE, Sole distributor
175 Fifth Ave., New York 10, N. Y.
Johannesgasse 3 Vienna 1
Hafenstrasse 61 - Linz a/D



PLASSER RAILWAY MACHINERY

MONOTUBE PILE DATA

TYPE PILE—YN

TIP DIAMETER—8 inches

BUTT DIAMETER—18 inches

GAUGE—#5

DESIGN LOAD—50 tons

UNSUPPORTED LENGTH—
26 feet, maximum

OWNER: State of Ohio

ENGINEERS: Bridge Dept.,
Ohio State Highway Dept.

CONSULTING ENGINEER:
Vogt, Ivers, Seaman & Assoc.,
Cincinnati, Ohio

GENERAL CONTRACTOR:
V. N. Holderman & Sons,
Columbus, Ohio

PILE DRIVING CONTRACTOR:
Beaumont Bridge Company
Columbus, Ohio



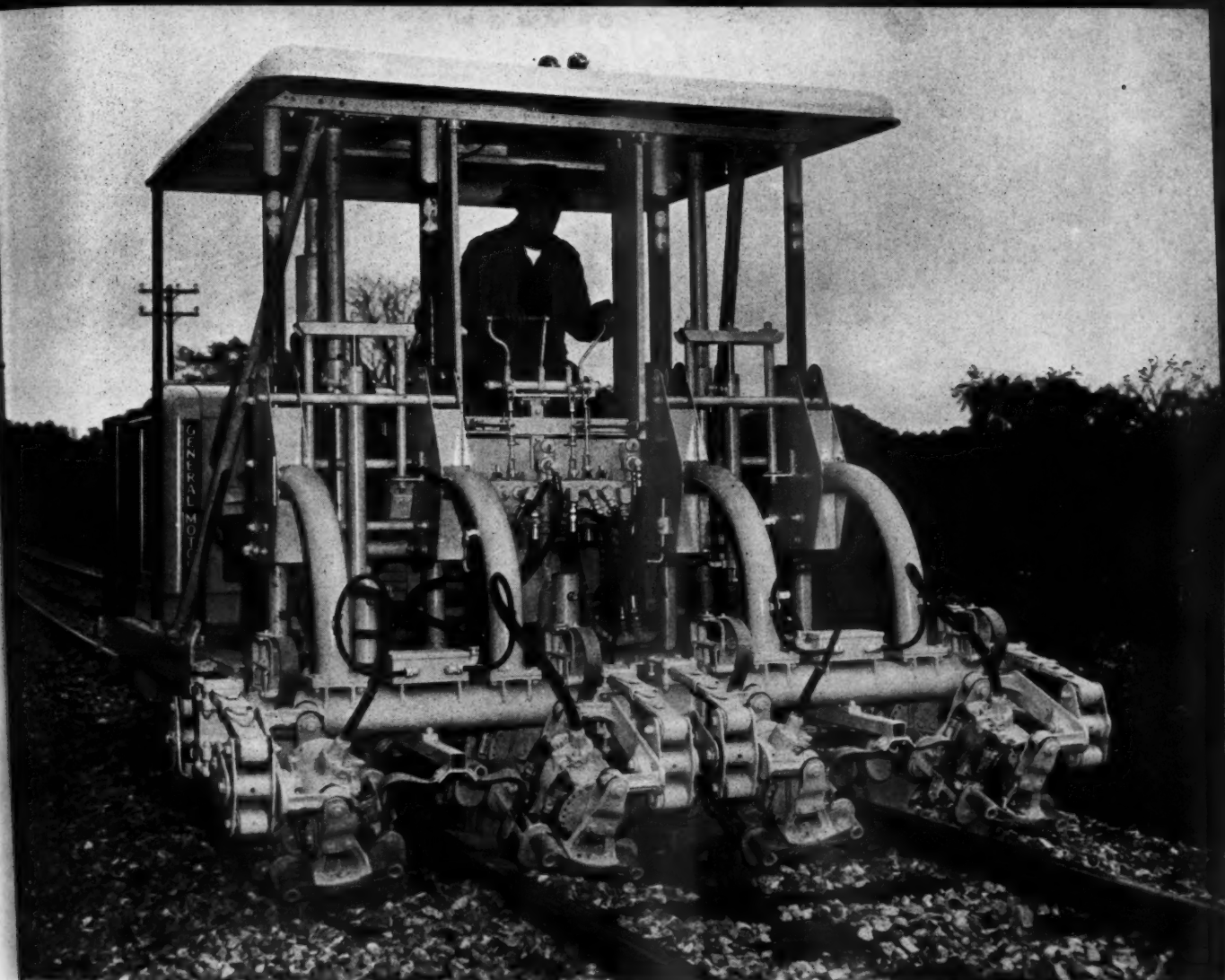
VERSATILITY plus ECONOMY with Monotube piles. When soil conditions at this site in Mansfield, Ohio, prohibited conventional construction in crossing low-lying land, this adaptation of a foundation supported on Monotube steel piles proved to be an economical solution.

Tapered, fluted Monotube piles are available in lengths, diameters and gauges to meet every requirement. Write The Union Metal Manufacturing Co., Canton 5, Ohio, for complete information.

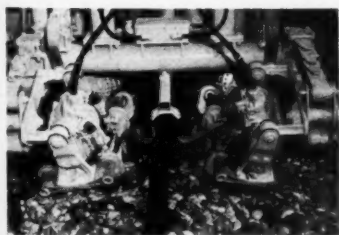
UNION METAL

Monotube Foundation Piles

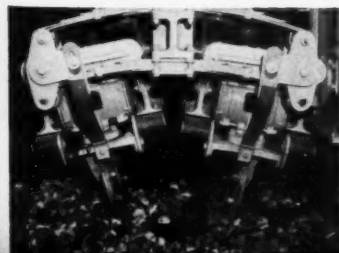
more productive *than ever before*



MORE PRODUCTIVE THAN ANY MACHINE IN ITS CATEGORY



Perfect consolidation of ballast right under the rail and from end of tie to specified distance inside the rail.



Since its inception, **THE JACKSON TRACK MAINTAINER** has had no close rival in its dual function of quality production tamping and maintaining track of finest characteristics under all conditions. Now, the 1959 model, equipped with much more powerful vibratory tamping motors which deliver **FORTY-TWO HUNDRED 6000-lb. BLOWS PER MINUTE** to the tamping bars, further increases that wide margin of superiority which led to its adoption by the vast majority of American railway systems. Let us give you the facts which so clearly indicate your best buy, by far, is the **JACKSON TRACK MAINTAINER**.

Acquirement plans to suit your needs.

JACKSON VIBRATORS, INC.
LUDINGTON **MICHIGAN**



...SYMBOLS

119

CF&I

of courageous advancement

The great emancipator, Abraham Lincoln, as counsel for the Rock Island, won the right of railroads to cross navigable waters. This was a major event in advancing the Rock Island to the shadow of Pikes Peak. Through courageous advancement, thirty-four years later the Rock Island announced "through trains" traveling across Indian Territory and to Colorado.

The Rock Island has retained this spirit to meet the changing national needs by adopting as standard the new CF&I 119 pound rail section. This acceptance is further evidence of the confidence being placed in the new CF&I rail sections by prominent Western Railroads.

The Rock Island's farsighted policy is as significant today as it was in yesteryear when the great fight for the right of railroads was fought by one road for the benefit of all.

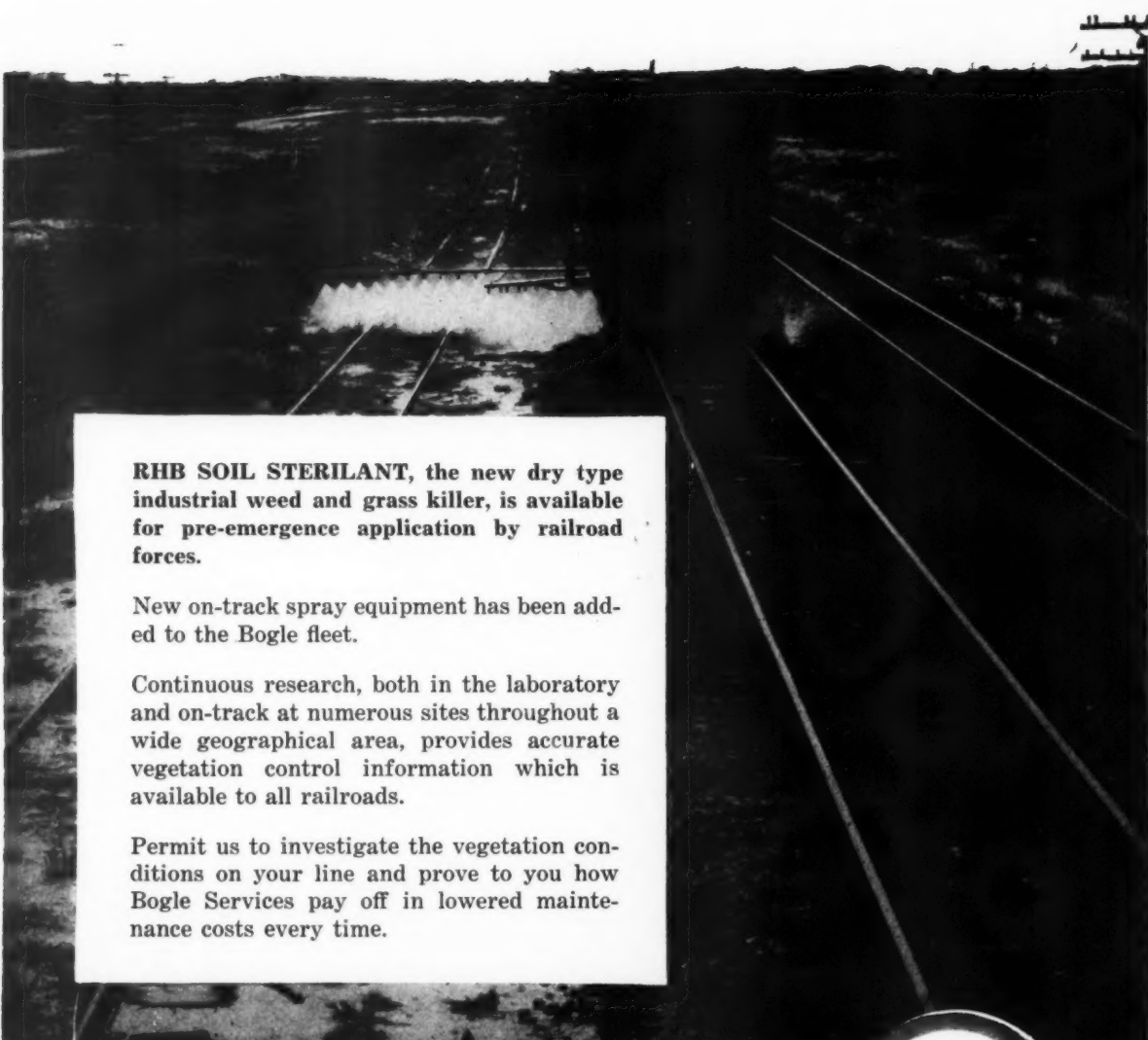


THE COLORADO FUEL AND IRON CORPORATION
DENVER, COLORADO



5364

BOGLE SERVICES ARE MORE COMPLETE THAN EVER BEFORE!



RHB SOIL STERILANT, the new dry type industrial weed and grass killer, is available for pre-emergence application by railroad forces.

New on-track spray equipment has been added to the Bogle fleet.

Continuous research, both in the laboratory and on-track at numerous sites throughout a wide geographical area, provides accurate vegetation control information which is available to all railroads.

Permit us to investigate the vegetation conditions on your line and prove to you how Bogle Services pay off in lowered maintenance costs every time.

The R. H. BOGLE Company

ALEXANDRIA, VA.

Memphis, Tenn.



COMPLETE WEED AND BRUSH CONTROL SERVICE



The importance of management support

A guest editorial by

B. R. MEYERS

President, AREA

Other AREA officers



F. R. Woolford
Senior vice president



E. J. Brown
Junior vice president



Neal D. Howard
Executive secretary

The M/W man—and I'm talking about the top officers now—needs to get on better speaking terms with his management.

There's a world of meaning wrapped up in this sentence. Let me try to explain what I mean by it:

The best way to start is to make the point that maintenance men can't do anything without the approval and blessing of management. This may seem to be a statement of an obvious fact but we need to be reminded occasionally of its full significance.

The properties may be badly in need of extensive repair work but unless management appreciates this fact, and has a full realization of the consequences of inattention, the situation is not apt to be remedied.

A maintenance department may represent the ultimate in progressiveness, skill, know-how and experience, but unless it has, or can develop, a sympathetic attitude on the part of management, these assets will lie dormant and unused. Maintenance men may have the keenest possible realization of the need for stabilized programs, but unless management also understands this need they will have to go on contending with programs of the "stop-and-go" variety.

I should point out here that managements are not all alike in this respect. At the one extreme are managements—which some of us are fortunate in having—who seem to have a full appreciation of maintenance problems. Fortunate indeed are those engineering departments that are dealing with management of this caliber.

At the other extreme we find managements who regard maintenance work as a necessary evil. On such roads maintenance work is the first to feel the "squeeze" when business declines. There will, also, be resistance to expenditures for mechanization, and to other measures designed to put maintenance activities on a more efficient basis.

The big question is this: What can be done in such cases? It is important to realize first that the maintenance man has a responsibility here. That responsibility is to see that management fully understands the problem.

In other words you've got to keep trying. Persistence will eventually win out for the simple reason that logic and economics are on your side. Management's primary responsibility is to the owners. Its obligation is to see that they receive an adequate return on the investment they have made in the company.

Therein lies an approach for the maintenance man that cannot be ignored by his superiors. His cue, therefore, is to make his proposals in terms of what they mean in producing more net income for the company. By using equipment, methods and techniques available today he can show that substantial economies can be realized *while, at the same time, maintaining the properties to an adequate standard.*

One hesitates to use the term "education" in referring to management, but that's precisely what the M/W man has to do in many cases. And he has to keep telling the story until he gets results.

AREA Program...

Schedule of events at the Sherman Hotel, Chicago, March 8-11

Directory of committee meetings and other events

Luncheons or meetings of individual committees or other groups are scheduled to be held during the convention as follows:

Sunday

AREA Arrangements Committee—meeting, 1:30-5:00, Gold room *
Board of Direction—meeting, 2:00-5:00, Orchid room
Highways—meeting, 3:00-5:00, Jade room

Monday

Roadmasters' Association—meeting, 9:00-5:00, Holiday room
Ties—meeting, 2:00-5:00, room 107
Track (subcommittee chairmen only) — luncheon, 12:00-2:00, Time room
Engineering and Valuation Records—luncheon, 12:00-2:00, Parlor K
Water, Oil and Sanitation Services—luncheon, 12:00-2:00, Gold room — meeting, 2:00, Ruby room
Yards and Terminals—luncheon, 12:00-2:00, Emerald room
Contract Forms — luncheon, 12:00-2:00, Life room
Economics of Railway Labor—luncheon, 12:00-2:00, Jade room
Economics of Railway Location and Operation—luncheon, 12:00-2:00, Orchid room
Clearances—luncheon, 12:00-2:00, Polo room

Tuesday

NRAA—meeting, 10:30, Jade room
Tellers—meeting, 8:00-12:00, Gold room
Roadmasters' Association—meeting, 9:00-5:00, Holiday room
Reception for speaker's table guests — reception, 11:30-3:00, Parlor O
Reception for committee chairmen—reception, 11:30-3:00, Parlor M
Roadway and Ballast—meeting, 10:00-11:00, Orchid room
Buildings—meeting, 9:00-12:00, room 107
Wood Preservation — meeting, 9:00-12:00, Time room
Waterproofing—breakfast, 8:30, Celtic room

Wednesday

National Association of Railway Engineers of Tests—meeting 9:00-12:00, Gold room—luncheon, 12:00, Ruby room—meeting, 2:00-5:00, Gold room
Board of Direction and Arrangements Committee—luncheon, 12:30, Louis XVI room
Board of Direction—meeting, 2:00-5:00, Orchid room
Committee on Continuous Welded Rail—meeting, 1:30, Life room

* Rooms for all committee luncheons and meetings, except that of Engineering and Valuation Records, in Parlor K, are located on the first floor, directly above the mezzanine floor. Parlor K is located on the mezzanine floor.

... Plus the RT&S coffee bar

For fruit juices, rolls and coffee meet with us in Parlor O on the mezzanine level every morning from 8:00 to 10:00—come and meet your friends.

MONDAY MORNING, MARCH 9, 9:30 to 12:00—Grand Ballroom

Presidential address—B. R. Meyers
Reports of Executive Secretary Neal D. Howard and Treasurer A. B. Hillman
Keynote Address—"Change and challenge in railroading," by D. P. Loomis, president, AAR
Address—"Give the 'high ball' to safety," by Paul Jones, director of public information, National Safety Council
Address—"What I observed in Europe of interest to the American railroads," by Ray McBrien, director of research, D&RGW
Address—"Summary of discussions before industry conference on railway-highway problems," by H. H. Hale, assistant to vice president—highway transportation, AAR

MONDAY AFTERNOON, 2:00 to 5:00—Grand Ballroom

Reports of Committees

Highways (2:00)

Address—"AASHO road test being carried on in Illinois" (illustrated), by W. N. Carey, Jr., chief engineer for research, AASHO Road Test

Contract Forms (2:40)

Engineering and Valuation Records (2:55)

Yards and Terminals (3:15)

Motion pictures

Economics of Railway Location and Operation (4:05)

Address—"Economics of railway engineering," by Frank J. Richter

Waterways and Harbors (4:50)

TUESDAY MORNING, 9:00 to 12:00—George Bernard Shaw Room

Reports of Committees

Cooperative Relations with Universities (9:00)

Address—"The engineer's responsibility to railroad management," by E. G. May, vice president, Operations and Maintenance Department, AAR.

Water, Oil and Sanitation Services (9:40)

Address—"The broadening field for railway water service engineers," by E. T. Myers

Wood Bridges and Trestles (10:15)

Address—"How serviceable are 50-year-old bridge stringers," by L. P. Drew, assistant research engineer structures, AAR

Masonry (10:30)

Address—"Prestressed concrete in Western Europe and Russia" (illustrated), by Ben C. Gerwick, Jr., president, Ben C. Gerwick, Inc.

Impact and Bridge Stresses (11:10)

Iron and Steel Structures (11:25)

TUESDAY NOON, 12:00—Grand Ballroom

Annual luncheon

Announcement of results of election of officers

Address by B. W. Heineman, chairman, Chicago & North Western, on "Railroad economics today"

TUESDAY AFTERNOON, 2:30 to 5:00—George Bernard Shaw Room

Reports of Committees

Clearances (2:30)

Waterproofing (2:40)

Wood Preservation (2:50)

Buildings (3:00)

Address—"Practical applications of infra-red ray heating to railroad buildings" (illustrated), by L. R. Morgan, assistant research engineer structures, AAR

Maintenance of Way Work Equipment (3:25)

Economics of Railway Labor (3:55)

Address—"Report on work study—A tool for railway management, as practiced on British railways," by H. J. Fast, assistant chief engineer, CNR

Ties (4:35)

Address—"Studies of anti-splitting devices for ties at the AAR Research Center" (illustrated), by H. M. Sutcliffe, research technician, research staff, AAR

WEDNESDAY MORNING, 9:00 to 12:00—Grand Ballroom

Reports of Committees

Special Committee on Continuous Welded Rail (9:00)

Rail (9:15)

Address—"Further three-dimensional photoelastic studies of stresses in rail head due to wheel contact pressure" (illustrated), by M. M. Fracht, research professor of mechanics, director of experimental stress analysis, Illinois Institute of Technology

Track (9:55)

Address—"Standardization of turnouts—What must be done to achieve it?", by M. J. Zeeman, engineer of track design, Santa Fe

Roadway and Ballast (10:45)

Address—"Soil engineering problems on the Quebec, North Shore & Labrador" (illustrated), by R. W. Fryer, soils engineer, QNS&L

Closing business

Installation of officers

Adjournment

WEDNESDAY AFTERNOON, 1:30 to 5:00*

Post-convention inspection of AAR Research Center

Where to in work equipment?

● In view of the high annual investments which railroads have made during the last few years in M/W work equipment, can the railroads be expected to continue purchasing such equipment at a fast rate? The answer, based on figures obtained from the railroads themselves, is "yes." Even in 1958—a relatively poor year businesswise—the railroads spent a whopping \$35 million for machines.

This information was developed from reports made by railroads to this magazine. The reports also indicate that work-equipment expenditures for this year, based on reports received before the recent business upturn got underway, will be more than \$32 million.

Since annual M/W expenditures by Class I railroads decreased from \$1.43 billion in 1957 to \$1.24 billion in 1958, it is significant that equipment expenditures have remained so high. Obviously, such equipment offers the roads a means for accomplishing their maintenance at lower unit costs.

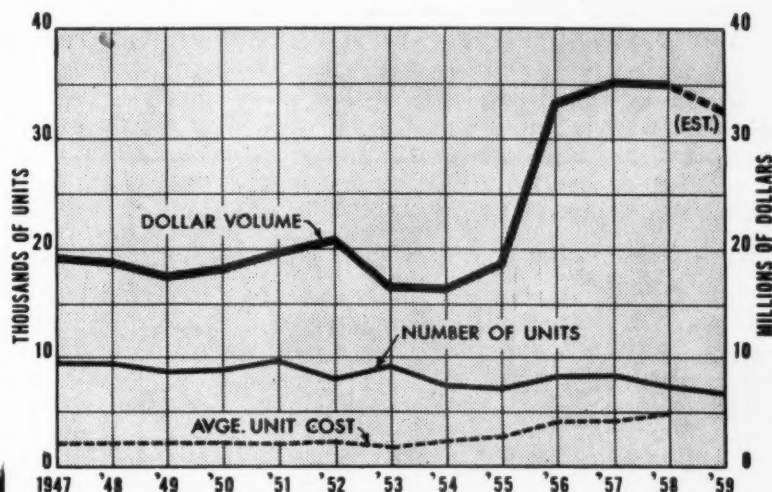
Machines are getting bigger

Although last year's expenditures for equipment were at a high level, the number of units purchased in 1958 fell off from the previous year. This would seem to indicate that a greater number of the larger more-expensive units were acquired. There is evidence to indicate that generally higher prices for machines also was an influencing factor. The railroad reports indicate that the average cost per unit last year was \$4,902. In 1957 the average was \$4,148 per unit.

An accompanying table shows the record of purchases of work-equipment units as reported to this magazine by the railroads. From this, it can be seen that the number of units purchased in 1958 was the lowest in four years. However, in two categories of equipment, i.e., tie-renewal machines and communications equipment, the totals were higher in 1958 than for the previous year. Also, the total bridge and building equipment purchases in 1958 were about the same as 1957.

The increase in purchases of tie-renewal machines in 1958 points up the continuing interest which M/W officers are giving to this area of main-

Railroad reports covering purchases of M/W machines show that they invested \$35 million in this equipment in 1958. While this amount is about the same as that spent in 1957, the number of units was somewhat less. Outlook for 1959 — a further investment of more than \$32 million.



ANNUAL INVESTMENT by railroads in M/W work equipment has been over the \$30-million mark for the last three years. Railroad reports also indicate an expenditure of about \$32 million for this year. Leased equipment is not included on this chart.

tenance. Despite the longer service life which is being exacted from cross-ties, this phase of maintenance still remains the principal maintenance expenditure. Hence, any reduction in the cost of renewing cross-ties through mechanization can effect a substantial return on the investment.

In addition to the larger units which remove the old ties and install new ones, machines in this category include tie handlers, cutters, tie-end removers, tie-bed scarifiers, nipping machines and rail lifters. There is no doubt that spike pullers and spike drivers are also important machines in this operation. However, because the earlier models of such machines were developed for rail-laying operations, these units were originally included in the rail-laying category, and have been continued in that classification. Obviously, many spike pullers and spike drivers are acquired for use in tie-renewal work and, if a separation could be made, their numbers would substantially increase the total amount in this category.

The other category for which the total number of units purchased in 1958 showed an increase over the pre-

vious year is communications. All of the units reported for this group are radio sets. These included both the units bought for installation on track machines and trucks as well as the walkie-talkie sets carried by gang foremen, flagmen and equipment units.

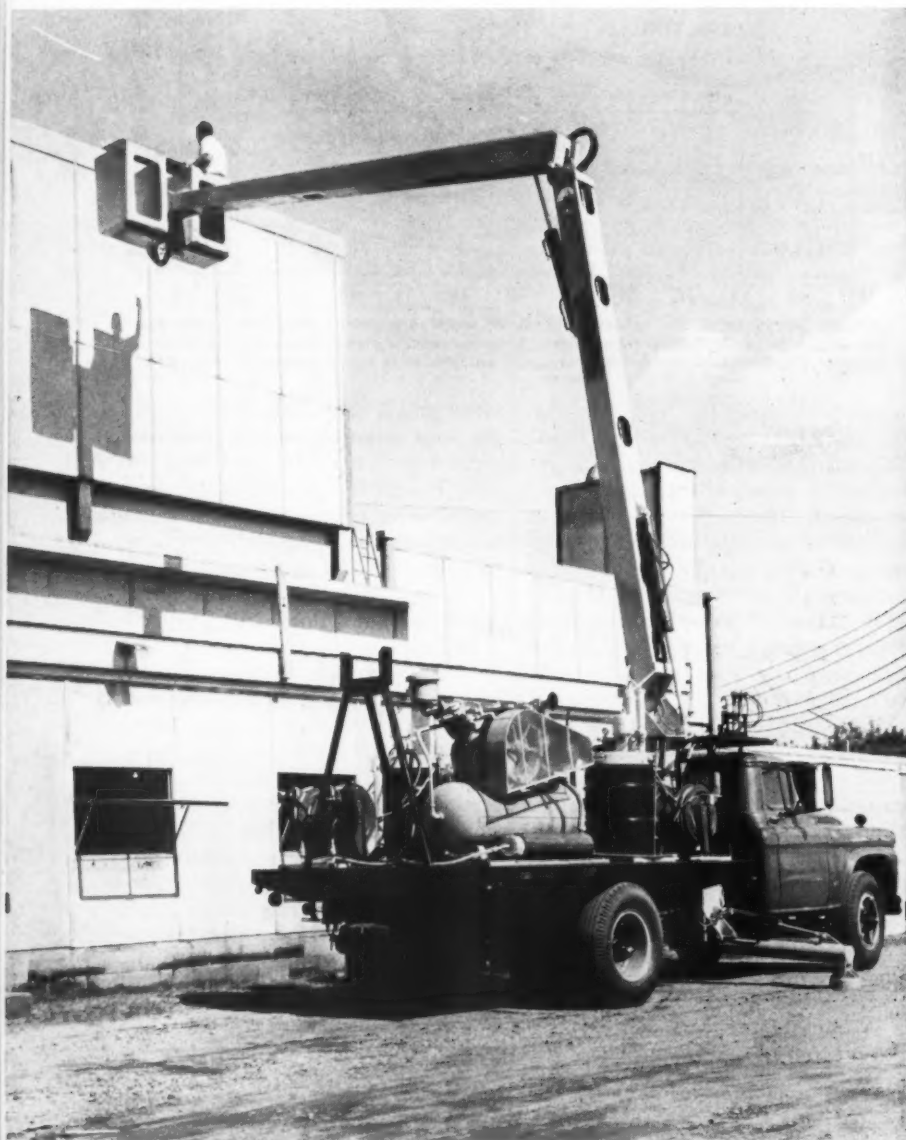
More on-track time

These sets have become increasingly popular for use with tie-renewal, surfacing, rail-unloading, weed burning and maintenance-gang operations. Through such communication more productive on-track time is obtained while keeping interruptions to trains at a minimum. Also, this equipment permits closer supervision and better coordination of work. Its use by track forces is still in its infancy and it can be expected that more railroads will be trying out this method for getting increased efficiency.

Two factors were responsible for holding the purchases of units in the bridge and building category at about the same level as 1957. One was increased purchases of such items as chain saws, portable pumps, impact

Purchases of M/W work equipment by categories

	1955	1956	1957	1958
Ballasting equipment	786	853	790	678
B&B tools and equipment	453	540	440	436
Cranes	63	82	145	65
Grading equipment	228	325	365	190
Misc. track machines	680	798	480	342
Power plants	357	498	353	351
Rail-laying equipment	684	898	733	352
Tie-renewal equipment	137	360	176	224
Transportation men & mat'l	3,070	3,293	4,147	3,269
Weed-control equipment	149	157	212	158
Communications	—	—	129	148
Unclassified	—	390	421	295
Total units reported	6,607	8,194	8,392	6,508



AERIAL BOOMS, mounted on trucks, are making it easier for workmen to reach above-ground elevations without the time and expense of erecting scaffolds.

wrenches, concrete vibrators, power drills and paint-spraying outfits.

The other factor was the development of equipment specifically tailored to railroad needs. An example is an air-operated machine designed especially for use in bridge-deck renewal work. It is equipped with wood borers, impact wrenches and spiking hammers, and has extra outlets to permit the use of other air tools such as hammers, reciprocating saws and paint-spraying equipment.

In fact, there is more emphasis today on the mechanization of the B&B forces than ever before. Maintenance men are beginning to perceive that important economies can be realized through the use of equipment specifically designed for railroad B&B work. A recently introduced assembly of equipment built around a truck-mounted hoist with flanged wheels, specially tailored for use in making repairs to timber trestles, is an example. This development is in line with a trend toward the use of equipment, primarily cranes, hoists and trucks, capable of operating both on and off the track.

Another significant development in the B&B field is the increasing use of truck-mounted assemblies of spray-painting equipment featuring aerial booms or lifts equipped with crows' nests or platforms.

Trend toward leasing

Also worthy of mention is the increasing number of machines which are being acquired under lease agreements. These figures are not included in the accompanying table showing equipment purchases. But they should be added to the actual purchases to obtain the amount of equipment being acquired by the railroads. In 1956, only a little more than 200 units were reported as being acquired under lease. In 1957, this total rose to more than 630 units and in 1958 to more than 1,030 units—18 per cent of actual purchases.

What's in prospect for work equipment purchases for 1959? There are two basic factors to consider. One is the fact that the railroads generally expect business to be moderately higher than in 1958. Another is a continuing need to cut costs wherever possible. Because of this combination of factors it is logical to expect that work equipment purchases will be maintained at a consistently high level.

Investigation by committee . . .

Before PRR buys work equipment

● How does railroad management know when a machine or product designed for maintenance-of-way purposes is satisfactory for use on its lines?

C. J. Code can tell you how the Pennsylvania finds out. As assistant chief engineer, staff, he is in charge of the road's testing of maintenance-of-way materials and equipment. He also is chairman of the PRR's M/W Machinery Committee and "rides herd" on 18 vociferous men who, with him, comprise this committee.

The members of this committee are not inventors but are practical railroad men. The committee is charged with investigating any new developments in roadway machinery and in the methods of maintaining such equipment. The members take this responsibility seriously. They are keenly aware of the need for mechanizing maintenance operations and are quick to grasp the significance of any new development in this field.

The experience backgrounds of the individual members are important in determining the contribution they make to the work of the committee. Each has his own line of thought when evaluating the possible benefits of a new product and is not at all bashful about expressing his viewpoint. The result is that the chairman must "pull a tight rein" at times when reconciling differences of opinion.

Why have this committee?

The M/W Machinery Committee had its origin 30 years ago—April 20, 1929 to be exact. At that time, new track materials and machines were being introduced freely. The Pennsylvania, even then aware of the potentialities of machinery, would obtain a new machine and try it out on several supervisors' territories. The trouble was that, while one track supervisor would be enthusiastic about its performance, another would be equally insistent that it was not satisfactory. Also, reports from supervisors on other railroads would be at equal variance.

What the Pennsy management wanted was facts—uncolored by either

The Pennsylvania has a special committee for investigating and reporting on new developments in roadway machinery, products and other M/W equipment. When a new machine is being considered, the PRR's M/W Machinery Committee sees the unit in actual service and makes a report on its performance as well as the practicability of its use on the railroad. The committee also works with manufacturers and makes suggestions for design improvements, particularly with regard to safety hazards. Reports of this group serve as a guide for high-level decisions as to whether or not units will be purchased.

favorable or unfavorable prejudice—for determining the practicability of a machine or product. The proper way to develop this information, it believed, was to set up a committee of experts for making full investigations of machines and then submitting unbiased reports on their efficiency and effectiveness. This led to the birth of the M/W Machinery Committee.

Who's on it—and why

Because of the need to make laboratory tests or analyses of the various materials making up these products and machines, it was believed that the engineering department representative at Altoona laboratory should be a key figure in the activities on this committee. For this reason, F. M. Graham, then assistant engineer of standards, was appointed chairman. Other committee members included the system superintendent of work equipment, and the supervisor M/W equipment from each of the road's then three regions. The committee met regularly once a month to consider all new items, except during the depression period of 1932-34, during which time it was discontinued.

When Mr. Code was appointed engineer of tests, maintenance of way, in 1941, he took over the chairmanship of this committee and has continued to serve in that capacity since his appointment as assistant chief engineer-staff in April 1958. After working with it for about five years, he con-



The Committee at work ▶▶

cluded that, as then constituted, it was top heavy with machinery experts. He felt that insufficient attention was being given to the practical aspects of the use of machinery. For this reason several officers whose responsibilities bring them into closer touch with field work were added to the committee to serve on a rotating basis. These members serve three months and are replaced.

When the Pennsylvania increased the number of regions from three to nine in 1955, the M/W Machinery Committee was expanded to include the supervisor M/W-material and equipment from each region. Also, M. C. Bitner, manager methods and cost control, joined the committee and became its first vice-chairman. The



CHAIRMAN CODE exhibits sober concentration as he listens to deliberations of committee.



UNDER DISCUSSION—Device for blowing ballast under ties for surfacing track. Left to right around table—L. W. Hayhurst, C. F. Montague, R. E. Kleist, Mr. Code, M. C. Bitner, W. N. Taggart, (A. P. Talbot head in background), A. B. Lewis, A. H. Stimson, J. T. Cowles.

The committee coordinates machinery efforts of PRR'S

Consist of M/W Machinery Committee

Permanent members

C. J. Code, (chairman), asst. chief engineer-staff, Philadelphia
 M. C. Bitner, (vice-chairman), engineer methods & cost control, Philadelphia
 C. F. Montague, (2nd vice-chairman), superintendent M/W equipment, Phila.
 R. E. Kleist, (secretary), asst. engineer of tests-M/W, Altoona, Pa.
 H. W. Swartz, supervisor M/W-material & equipment, Indianapolis, Ind.
 C. G. Lybarger, supervisor M/W-material & equipment, Cincinnati, Ohio
 W. N. Taggart, supervisor M/W-material & equipment, Baltimore, Md.
 J. V. Adams, supervisor M/W-material & equipment, Pittsburgh, Pa.
 A. H. Stimson, supervisor M/W-material & equipment, Buffalo, N. Y.
 T. H. Taylor, supervisor M/W-material & equipment, Chicago
 R. H. Meintel, supervisor M/W-material & equipment, Philadelphia
 J. H. Ault, supervisor M/W-material & equipment, New York
 A. B. Lewis, supervisor M/W-material & equipment, Cleveland, Ohio
 R. R. McMeans, inspector M/W equipment, Pittsburgh, Pa.
 J. T. Cowles, supervisor M/W equipment, Penna-Reading Seashore Lines, Camden, N. J.
 A. P. Talbot, assistant engineer, office chief engineer, Philadelphia
 G. J. Cotton, supervisor M/W equipment, Philadelphia

Rotating members

1958

E. T. Hammer, supervisor comm. & signals, Philadelphia
 N. Olson, district engineer, Pittsburgh
 S. G. Wintoniak, engineer of structures, Chicago

1959

L. W. Hayhurst, supervisor communications & signals, Chicago
 W. Glavin, asst. district engineer, Altoona
 J. W. N. Mays, assistant engineer, office of system engineer of structures, Phila.

second vice-chairman is C. F. Montague, the road's superintendent of work equipment.

Currently, the consist of this committee is as shown in the accompanying box. The permanent members are those officers having the titles shown. The rotating members are appointed by the chief engineer for a one-year term and their titles are not a significant factor to their appointment except to obtain a well-rounded committee. The committee meets every three months, usually the first Thursday of March, June, September and December. Ordinarily, the meetings start at 9 am in a conference room at the road's general headquarters building in Philadelphia. Except for the luncheon break, they continue until about 4:30 pm.

Has great influence

The M/W Machinery Committee primarily functions to coordinate the machinery efforts of the nine regions of the railroad. It does not buy machines for the railroad. However, it has a direct influence on the road's



UNDER DISCUSSION—Spike driver and other rail-laying equipment. Background—H. W. Swartz. Right side of table, left to right—L. W. Hayhurst, T. H. Taylor (leaning, back), R. H. Meintel, C. F. Montague.

Views on these pages show meeting of committee at Philadelphia on January 26

UNDER DISCUSSION — Consideration of a light-capacity track crane had led to a discussion of current practices involving track-maintenance gangs. Left to right —A. B. Lewis, A. H. Stimson, J. T. Cowles, J. V. Adams, G. J. Cotton, R. R. McMeans, C. F. Montague. C. J. Henry, PRR chief engineer, who doesn't appear in any of the photographs, was also present at this meeting.

nine regions

purchases of machines. It is this group which decides whether or not a machine is satisfactory for railroad use. Hence, realizing the import of its decisions, it appraises each machine very carefully and renders a report only after a thorough investigation has been concluded.

Mr. Code points out that the committee merely recommends. What happens after that, he adds, is the result of high-level decisions.

Development of new M/W machinery in the past five years has been so rapid that it is not always feasible to follow through the full Machinery Committee procedure before arriving at a decision to buy a new machine. The assistant chief engineer-maintenance, the engineers maintenance of way and the regional engineers are always on the alert for new machines which may be in use on other railroads. In addition to the activities of the Machinery Committee, these men frequently make trips to other railroads to observe the operation of machines. They may reach a conclusion that the economies to be obtained by using such a machine are so outstand-



ing that its purchase should be recommended immediately without waiting for Machinery Committee study.

Also, in some cases where the urgency of the situation indicates the advisability of such procedure, the chief engineer may appoint a special committee or individual to look into a certain machine and make a recommendation concerning its adoption. How-

ever, in normal routine a majority of such decisions are made on recommendation of the Machine Committee.

The committee may recommend that a machine or piece of equipment be developed either in its own M/W shops or by an independent manufacturer. An idea for a new machine may be referred to the road's chief mechanical officer for design or development.

Typical docket items

These subjects, discussed at a recent meeting of the M/W Machinery Committee, provide an example of the kind and scope of the work it does.

Track drill	Production tie tampers
Electric wood drill	Spot-tamping machine
Push car wheels and axles	Larger generator for trucks
Engine starting fluid	Lubricating grease
Hydraulic hose and couplings	Track-broom attachment
Power brush cutter	Tie nipping machine
Tie-plug driver	Rail-anchor applicators
Trenching machines	Radio-controlled surf'g device
Crane boom snubber	Flywheel guard
Spike-driving machine	Weed burners
Driver for broken spikes	Mower for slope cutting
Manual on repair of hydraulic equip.	Tie-unloading machine
Manual of instructions for M/W equip.	Trackmen warning devices

PRR's M/W Machinery Committee (Cont'd)

The committee may send one or more of its members to other railroads for the purpose of observing a machine in actual service. At one time, it was the practice of the entire committee to see these demonstrations. But, because this was found to be unwieldy and slowed down the work of the committee, the practice was discontinued.

The committee may recommend that a machine or piece of equipment be purchased or rented in limited quantity for trial use on one or more regions. It may request that the maintenance-of-way test organization make tests of a machine or that the unit be made a subject for study by the engineer of methods and cost control.

In its field studies of a machine, the subcommittee looks to see if the unit performs its intended function properly. Also, the number of men required for its operation is a matter of importance. It pays particular attention to the sturdiness of a machine, looks for points of weakness and wear, and notes the occurrence of any breakdowns. Safety also is a prime factor.

The committee may consult with the manufacturer of a machine and recommend changes in design either to make the unit more adaptable for use on the Pennsy or to eliminate safety hazards. Such consultations are of great benefit to the manufacturers. They not only receive the advice of experts but also, if they make the suggested changes, get another chance to have their units considered by the machinery committee.

The M/W Machinery Committee may recommend that a machine be approved for general use on its railroad.

In this event, it does not necessarily follow that this unit will be purchased at once in any great quantity. For one thing the chief engineer may not have the necessary funds available in his budget. For another, all of the committee recommendations are subject to the approval of the chief engineer. He goes over the minutes of each meeting and makes the decision as to what shall be done.

How it operates

When the committee meets, all members have a copy of the minutes of the previous meeting. It shows all items which were given consideration and serves as a docket for the current meeting. The docket lists from 35 to 45 items, each one representing a separate device, machine, product or subject for consideration. The latter may include a change in the road's Manual of Instructions for M/W equipment.

A new docket item frequently is assigned to a subcommittee for investigation or study. Currently, there are 20 subcommittees, comprised of from one to three members, with some members serving on more than one subcommittee.

During the meeting Mr. Code calls on each subcommittee for a report. Forms are not used in making reports. In general, they are made orally, but occasionally written reports are made, with copies being sent to each committee member in advance of the regular meeting.

After each report, questions are fired rapidly at the reporting members.

Following the general discussion, Mr. Code canvasses the committee for individual opinions. He then winds up matters by succinctly dictating what he believes to be the consensus of opinion into a Dictaphone recorder. At the members request, the record is played back immediately so that all can agree as to the disposition to be made of this item. If necessary, corrections are made to the recording, but the wording of the report of that docket item is approved on the spot. It has been found that this procedure prevents misunderstandings later on and it disposes of the item without undue delay.

However, this does not necessarily mean that consideration of a particular item is dead. The committee may feel that a further trial is necessary before an opinion can be expressed, in which case this information will be entered on the report. In some cases, a manufacturer may not even have a machine available at the moment for testing. This information is entered on the report and the subject is continued. Where the committee has concluded its consideration of a unit, that information also is entered on the report.

After disposing of all docket items, the chairman then calls upon the members to report any new developments in machines. Mr. Montague, superintendent of M/W equipment, is the main source of such information because most of the supply men call at his office. New items are given numbers and are added to the docket. Subcommittees are then appointed by the chairman for investigating and making reports on individual items.

The committee will also discuss current problems of maintenance and the need for developing new machines to cope with them. Since most of the regional representatives previously served as track supervisors before becoming supervisors M/W material & equipment, they appreciate the trackman's problems, and have a practical viewpoint regarding them.

Copies of the report of each meeting are sent to the chief engineer, the assistant chief engineer maintenance, the two engineers maintenance of way and structures, each of the nine regional engineers, and to each member of the M/W Machinery Committee.

The value of having such a committee was summed up by Chairman Code in these words: "It performs an important function in connection with machinery and saves the railroad money."

*Central of Georgia's
formula for reducing
the cost of
making repairs
to timber trestles*

• Mechanization • Inspection • Scheduling

More fully explained, this formula means mechanization with specially designed machines and tools, more stringent inspection based on a new policy, and precise scheduling of material from the time it is ordered until it is delivered at the site.

● A group of maintenance officers was watching a bridge gang on the Central of Georgia making repairs to a timber trestle. Individuals in the group registered keen interest, and some surprise, as they watched the gang demonstrate this road's equipment and methods for renewing caps and stringers and performing other operations commonly encountered in trestle-repair work.

What these men were seeing was of unusual interest for several reasons. One was the nature of the equipment being used. Another was the proficiency and speed with which the men performed the several operations that were demonstrated during the short period the spectators spent at the site.

More important, however, than these surface indications of progress and efficiency was the story behind them as it unfolded in discussions with Central representatives who acted as hosts to the visitors. These included W. E. Chapman, chief engineer, maintenance, George W. Benson, division engineer, V. W. Oswalt, superintendent maintenance equipment, and R. A. Youngblood, process superintendent bridges and buildings.

The story had its beginning several years ago when Mr. Chapman and his associates became convinced that bridge-repair work, particularly that involving timber trestles, could be placed on a much more efficient and economical basis. This could be done,

they were convinced, by putting into effect a program based on these three points:

- (1) Mechanization with equipment specially designed for the purpose.
- (2) Inspection based on renewing only members that won't last 12 months.
- (3) More careful planning and scheduling all along the line.

MECHANIZATION

For use by its bridge gangs the Central of Georgia has settled on an outfit of mechanized equipment specially designed with the requirements of timber-trestle work in mind. The outfit is built around a truck-mounted hoist with retractable flanged wheels for on-track operation. This machine, known as the Fairmont A40 Series A Hy-Rail unit, has a telescoping boom mounted on a 2-ton International Harvester truck chassis, with an auxiliary transmission that permits the same speeds in reverse as forward. The boom is hydraulically operated by a separate engine and pump. It has two cable lines and may be rotated through

How a cap is renewed . . .



1 Bridge deck is jacked up sufficiently to clear cap by hydraulic jacks placed on cap of adjacent bent. Note new cap has been placed on deck.



2 Drift bolts holding old cap to piles are removed by hydraulic bolt puller hung from hoist line.

More steps when renewing a cap

360 deg. Movements of the truck may be controlled from the hoist operator's position.

At the work site the hoist is normally operated as an on-track unit for handling stringers, caps and other heavy members to and from the bridge and for doing such other lifting jobs as may be necessary. If occasion demands, however, it may be operated on the ground. In moving over the highway to and from the job, or between jobs, the hoist not only transports itself but is also used to carry the men and, if necessary, to haul a two-wheel trailer carrying tools and materials. The hoist also moves the camp trailers to each new work site.

The hoist is also used to transport another important unit of the equipment outfit — a multiple-pump hydraulic power unit for operating hydraulic tools. Known as the Fairmont W103, this unit is driven by a Wisconsin 32-hp, four-cylinder gasoline engine, which drives four hydraulic pumps, two of the vane type and two of the piston type.

The two vane-type pumps deliver oil up to 2000 psi, and the piston-type pumps deliver oil up to pressures of 3500 psi. There are four control valves. One of the valves controls the 3500-psi pump output through a single line which is used only for operating hydraulic jacks. One valve has a single 2000-psi connection, and another has two of these connections. Only one of these lines can be used at a time. The advantage is that two tools can be connected to the valve at the same time and the pressure diverted from one to the other by shifting the position of the valve. Thus the need is eliminated for disconnecting and reconnecting lines when two tools are being used alternately.

The fourth valve on the multiple-pump unit also has two connections, one for 3500-psi and the other for 2000-psi oil, although only one of them delivers oil at a time.

When in use the hydraulic power unit is placed on a push car so that it can be moved about on the trestle independent of the hoist. When the trestle is not too high, the power unit is placed on the ground and the push car used for other purposes.

Tools provided for operation from



3 Old cap is removed by the hoist. Hitch is first taken on the cap at a point between the rails. Then the hitch is shifted to a position outside the rails as shown here.

the multiple-pump power unit include a chain saw, a wood borer, a bolt puller, an impact wrench, a bolt cutter and a spike and drift-bolt driver. Also included in the outfit are four 30-ton hydraulic jacks, two of which are equipped with special bases so they can be mounted on piles for jacking up bridge decks. Special jacking beams are provided for use in this operation, and there is also a special bridge scaffold consisting of a welded steel framework with a walkway of non-skid grating. All the tools and devices in this group are Fairmont products.

So that the foreman can keep in close touch with approaching trains, and thereby minimize the amount of gang time lost due to traffic interruptions, the gang is equipped with a dual two-way Motorola radio set mounted in a metal housing. Each set is used only on alternate days with the other

serving as a standby unit. For charging the radio batteries a small gasoline-engine-driven generator is provided. The foreman also has a walkie-talkie set for use in case he is not within convenient reach of the dual set.

The bridge gangs each now consist of a foreman, two carpenters and four laborers.

INSPECTION

In its efforts to reduce the cost of trestle maintenance the C of Ga is banking heavily on a policy of more stringent inspection that was put into effect on January 1, 1957. The basis of this policy is a rule to the effect that only those members that won't last another 12 months are renewed. Application of this policy requires extremely careful inspections, which are made by the supervisors of bridges and buildings in the fall. To make certain



4 Cap now in clear and being lifted by hoist to deck of the bridge.



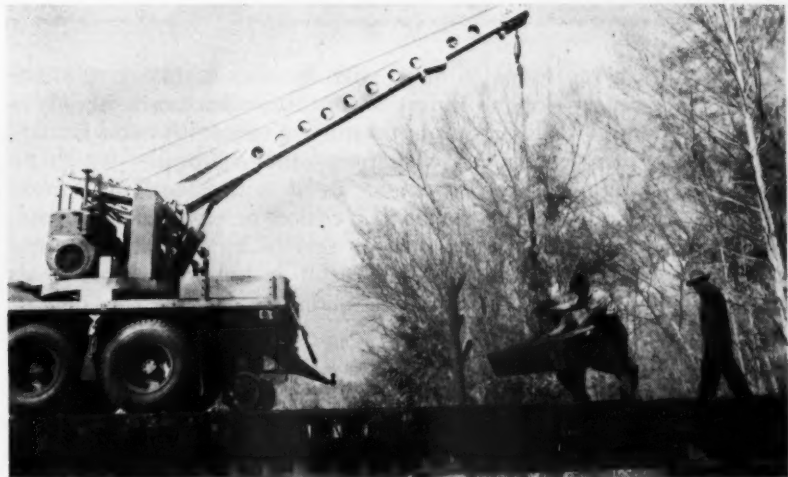
5 New cap has been placed on top of bent and is being shifted into position.



6 With hoist line looped around end of cap it is being pulled into position.



7 Holes for drift bolts are bored by hydraulic drill. Power plant in rear.



8 Old cap is removed from bridge by the hoist. This machine has a telescoping boom mounted on a two-ton truck. The hoist operator can control movements of truck.

the policy is being followed to the letter, spot checks are made later by the process superintendent B&B.

By this single stroke the road has effected a surprising reduction in the amount of timber used in making repairs. In 1956, the year before the new policy went into effect, the amount of material used for this purpose totalled 790,000 bd-ft. In 1957 it dropped to 220,000 bd-ft, and in 1958 it remained at the same low figure.

The inspection is only the first step in a carefully worked out system of ordering, framing, treating and scheduling designed to reduce lost motion and promote efficiency and economy all along the line.

SCHEDULING

The bridge-repair programs of the three divisions, as prepared by the division engineers, are sent to the chief

engineer maintenance for approval. The reports are then consolidated as to different sizes and types of material, and schedules of work days are worked out for each structure. In this manner an accurate estimate of labor and material needed for the following year is made.

Orders for the necessary material are placed directly by the chief engineer maintenance and in so doing he indicates the dates when it will be needed. All bridge material is framed and treated at the plant of the Southern Wood Preserving Company at Macon, Ga. That for each structure is bundled separately, and each bundle is marked with the trestle number.

When notified to do so the treating plant loads the bundles for shipment in such a manner that when the bundles are unloaded from a work train or local freight the top bundle or bundles will be for use on the first trestle

reached by the material train, and so on.

The schedules are worked out so that the material is unloaded before arrival of the bridge gang. In the meantime each gang has been provided with a schedule of the work to be done, indicating how much time will be needed at each structure. A gang will, therefore, move over its territory from bridge to bridge knowing the material it needs will be waiting for it at each job.

This isn't all the Central is doing to reduce the cost of maintaining its structures. It is now engaged in processing material released from bridges for further use. When repairs are made to a bridge the salvageable material released is piled at the site and picked up at the time the new material is unloaded the following year. It is then taken to a mill at Columbus, Ga., where usable pieces are processed as necessary for further use.

*The machinery
manufacturers
have the
floor and here's ...*

... What they say about railroad practices

This article represents a new twist in seller-customer relationships. The seller—in the form of the manufacturers of M/W work equipment—is given an opportunity to speak his mind frankly about those practices of his customers—the railroads—which he feels lead to unnecessary expense. Be it understood that these statements are not presented here in a critical or complaining sense. The purpose, rather, is to perform a service by bringing to light practices which, if corrected, could result in important economies and other benefits for the railroads.—Editor

● The relationship between the manufacturers of work equipment and railroad maintenance men is probably unique in American industry.

Here's how one manufacturer describes this relationship: "Railroad men and railroad supply men, practically without exception, recognize and are proud of the unusually close tie between them, which is unique in customer-seller relationships." This tie arises doubtless from the highly specialized nature of the field, requiring the closest possible working relationship between the manufacturers and their customers. In fact, "in many ways," says the man quoted above, "the railway equipment manufacturer has been the research and development laboratory for the railroads."

A situation like this is bound to result in close personal relationships between sellers and customers. Even so, the seller, remembering that the "customer is always right," seldom feels he is in a position to comment on acts or practices of the customer that he may consider unwise or uneconomical. The purpose of this article is to give him that opportunity.

Ask any manufacturer if he has any complaints about how his equipment is

used by the railroads and he is almost certain to bring up the problem presented by inexperienced operators.

From conversations with the manufacturers you gather that this is a complex problem. It arises partly from the common practice of changing operators when a machine is moved from one territory to another. Most of them recognize that the roads are helpless to correct this situation, but at the same time they feel that its impact could be lessened by better training of employees and closer supervision.

The suppliers are perfectly willing to provide a service man for instruction purposes when a machine is first delivered, but they don't feel they should be asked to do so when that same machine is passed to a new territory, and placed in the hands of an inexperienced operator.

Why not operator-instructors?

Several manufacturers suggested a possible solution for this problem. One man pointed to the practice of several roads that have established an operator-instructor on each region or division. "It is his function," he explained, "to become thoroughly familiar with

the operation and maintenance of the various types and makes of equipment used on that railroad and to train the other operators and repairmen on the division."

"One possible solution," as seen by another manufacturer, "would be to have representative operators and repairmen from all divisions of the railroad present when a new machine is put in service and to thoroughly train these men in its operation and maintenance so they could act as instructors on their own divisions."

Those vanishing manuals

Then there's the mystery of what happens to the instruction manuals provided by the manufacturers. These manuals, noted one supplier, are published at considerable expense and with extreme care to make them as simple and as easily understood as possible. Yet he is convinced that "not one person in a thousand of those who operate, maintain or supervise the use of our machines, ever reads the operating instructions *before* the machine is placed in service. Only when trouble occurs will they be referred to, if then."

Another man was also critical of supervisory officers. "In many cases," he said, "the roadmaster, division engineer or supervisor will get a piece of equipment in his territory, get all the production possible, and then pass it on to the next territory without any thought of maintenance or preparing it for the next district. This, of course, leads to the general deterioration of the machine and can be likened to a

They suggest these 'do's' and 'don'ts' for greater economy

- DO provide adequate training for machine operators.
DON'T expect manufacturers to instruct all new operators.
- DO see that instruction manuals are kept, used and followed.
DON'T request service for minor difficulties.
- DO plan equipment buying as far ahead as possible.
DON'T place orders for equipment at the last minute.
- DO make adequate provision for preventive maintenance.
DON'T pass machines to next territory in poor condition.
- DO a thorough job when overhauling machines.
DON'T duplicate proprietary machines in railroad shops.
- DO keep an adequate stock of spare parts.
DON'T depend on hearsay in judging the worth of machines.

taxi cab being driven 24 hr a day with three drivers and none of them bothering to check the oil, grease or do any general maintenance."

The subject of service

Another thing that seems to irk the manufacturers are unnecessary requests for service. Here's how one of them put it: "It is sometimes necessary for us to send service men hundreds of miles to make simple adjustments to a machine that should have been handled by ordinary railroad mechanics or machine operators."

"Time and again," said another supplier, "we have sent service men hundreds of miles to make minor repairs or adjustments that any good operator could handle." He then pointed out that all this service is added into the cost of the machinery and the railroad pays for it in the long run through higher costs.

Another factor tending to increase manufacturing costs is the manufacturers' inability to schedule production of their equipment in an orderly manner. One manufacturer explained the problem this way: "I am of the belief that all the manufacturers could reduce the price of their machines considerably if we could decently plan ahead from a manufacturing standpoint and schedule our production on various types of machines on a yearly basis. We might be anticipating an order for a large number of machines from a particular railroad and make our production plans accordingly, only to get a cancellation at the last minute. On the other hand, another railroad

may come in at the last moment in the spring season and insist on early delivery of a number of machines which we had not included in our production plans."

This man believes the railroads "should definitely plan at least a year ahead, then give out firm orders with a reasonable delivery date to insure their receiving the equipment when it is needed." He concludes with this cogent observation: "In the final analysis, both the manufacturer and the railroads could make considerable savings."

Increased cost isn't the only penalty of last-minute ordering of machines. One manufacturer suggests that the railroads, when ordering new machinery, "allow as much lead time as possible so the manufacturers will have a chance to meet the delivery date." Otherwise, he says, the equipment may not be available when it is badly needed.

Some manufacturers seem convinced the railroads could do a better job of keeping their equipment in repair. Said one of them: "Preventive maintenance, such as regular inspection of the machines to determine if they are ready for overhaul or replacement of parts, would save the railroads a considerable amount of money. Also, from an operating standpoint, machines would remain in service when they are actually needed in track production work."

Some roads, said another supplier, "do a thorough and workmanlike job" when it is necessary to bring a machine into the shop for major repair work. "But others," he added sadly, "do a

patchwork job and slap a coat of paint over it, grease and all."

When manufacturers are on the subject of repairs they are very apt to bring up the matter of spare parts. "We pride ourselves," said one of them, "on being able to furnish 24-hr service on parts from the plant, but, if the railroads would study their requirements a little closer in view of operating experience, they would not have so much downtime."

Closely akin to this subject is the comment of one manufacturer that the roads should not buy machines and then try to duplicate them in their own shops or build attachments for them. "Manufacturers," he said, "spend large sums in development work, and the only way they can recover such expenditures and make a profit is through the sale of their product. While the manufacturer makes a profit only on the machine he sells, the railroad makes a profit every day from now on through the use of the machine."

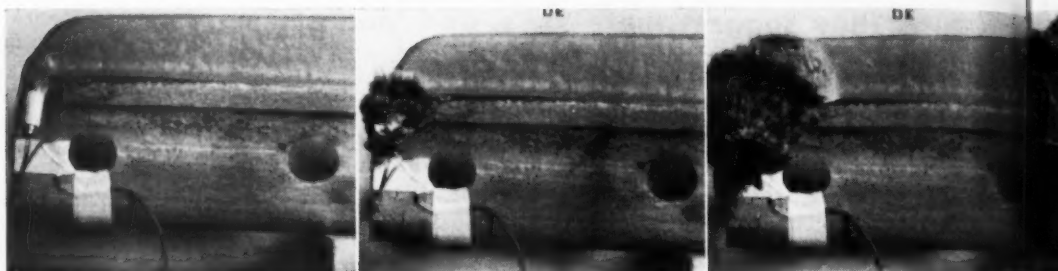
Willing to demonstrate, but . . .

The matter of demonstrations also comes up in conversations with the manufacturers. Without exception they welcome the opportunity of demonstrating their equipment. On the other hand, says one manufacturer, "the manufacturer should not be permitted to spend his money, time and effort on a demonstration of a machine that the railroad has no intention of buying."

This same manufacturer would like to have railroad men reserve judgment about a machine until they have actually seen it in operation and checked its performance. "Before a railroad buys a machine," he said, "it should have the unit tested on its own track or have an unbiased report from another railroad." He doesn't think the railroads should rely on hearsay in making up their minds about what equipment to buy.

These are some of the things that manufacturers say when asked to comment on railroad machinery practices. But underlying all their comments in this basic thought, as expressed by one of them: "I sincerely hope that your article will stress very forcibly that the comments it contains were made in an effort to render a constructive service." That, of course, is the main purpose of this article.

DETONATING CAP, held in place by masking tape, explodes the sheet explosive along manganese switch point tip. (Views are .0000032 sec apart.)



Flexible sheet explosive

It looks and feels something like a piece of linoleum. It's applied tightly over a manganese casting, say a switch point, and detonated like any explosive. According to its sponsor, the du Pont Company, the result is a prehardening effect on the casting. In fact, it's claimed that the hardness of austenitic manganese steel can, in this manner, be boosted quickly from Rockwell C18 to as high as C55.

● Explosive impact is now being used, largely on an experimental basis, to preharden austenitic manganese castings as used in railway frogs, switches and crossings. This is being done by a flexible sheet explosive developed by the Explosives department of E. I. du Pont de Nemours & Co., Wilmington, Del. The sheeting is cut to fit and placed on the surfaces to be hardened. It is then detonated and the resulting impact hardens the manganese steel.

Several advantages are claimed for this method of hardening. Costwise, it is said to be about the same as mechanical hardening. However, it is pointed out that all critical areas on the vertical, sloping and horizontal surfaces may be hardened by using explosive sheeting. Also, when this process is used there is said to be much less deformation in the casting than there is with mechanical hardening. Of major importance, furthermore, is the fact that any severe porosities or major flaws in a manganese-steel casting are said to be revealed by indentation through the explosive hardening process.

The process is a recent development. It was invented by Norman A. MacLeod and patented in March 1955. About that time the Taylor-

Wharton Company approached du Pont to obtain a type of explosive for metal hardening and the technical service needed in devising systems to use the material. Since none of the commercial or military explosives were satisfactory for this purpose, du Pont, working under an option from MacLeod, developed a flexible sheet explosive specifically for manganese-steel hardening. After considerable costly research and development work bore fruit, du Pont exercised its option and purchased exclusive rights to the patented process.

Some castings in service

In 1957, the Taylor-Wharton Company constructed a shooting pond at its Easton, Pa., plant and, with du Pont's technical assistance, began explosive hardening of manganese castings under water. Several castings were so hardened for use in railroad crossings and have been under field service tests since the fall of 1957. Recent examinations are reported to show that they are performing satisfactorily and that the flow of metal has been greatly retarded by the explosive impacting. Numerous tests of other explosive-hardened manganese steel castings, such as crusher parts,

dipper teeth, mill hammers, etc., also are under way.

Here's how the explosive is used:

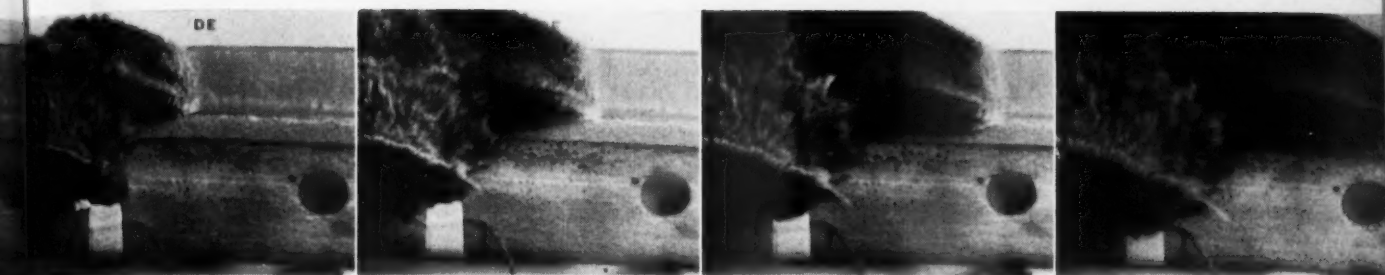
First is the cutting of the sheet in a shape to fit the surface to be hardened. This is done by laying a piece of paper over the surface, tracing an outline of the desired area and cutting out a paper pattern. The latter is laid over the sheet explosive and the desired strip or patch is cut out.

Second, it is necessary that the metal surface be dry so that the patch can be fastened to it. The drying may be done by spraying acetone or alcohol onto the surface, or warming the surface in other ways. When a dry surface has been obtained, a special adhesive, compatible with the explosive, is applied to the area.

The patch of sheet explosive is then placed on the area and smoothed flat on the surface. This can usually be accomplished by using the hands, but sometimes a wood rolling pin is used. It is necessary that the sheet explosive be flat against the surface with no entrapped air bubbles. This is to insure a uniform impact over the entire area being treated.

The next step is the attachment of the detonator, which usually is a No. 8 aluminum shell blasting cap. To assure consistent detonation, it is necessary that the cap be pointed at right angles to the sheet explosive, or butted against its edge, because this is its line of greatest velocity. By building up one edge of the patch explosive with extra pads, it is easier to point the detonator cap toward the edge of the sheet and assure positive detonation. The cap is fastened by masking tape and is detonated by an electric blasting machine.

The peak load applied during an explosion of the sheet explosive is said to



work-hardens manganese steel

be uniform throughout a sheet and for all sheets of the same thickness. It differs only in proportion to the thickness of the sheets. The hardness and depth can be obtained by varying the thickness of explosive used as well as the number of times the surface is impacted.

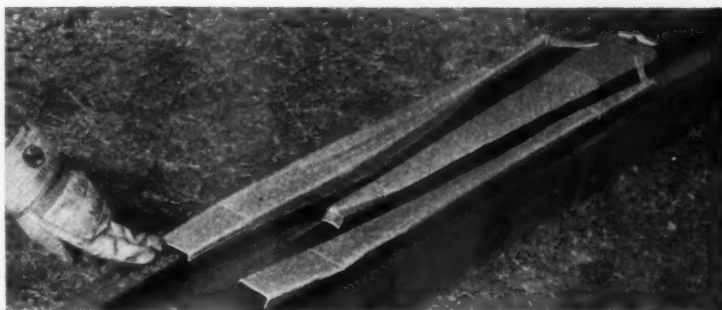
Du Pont points out that metal shears or a knife should not be used for cutting the sheet explosive. Metal to metal impact with explosives should be avoided for safety. Cutting should be done with a linoleum knife on a wood table faced with rubber tile. This is said to assure a clean cut with complete penetration.

If a railroad plans to harden a number of manganese castings at one point, du Pont recommends an outlying isolated area as the shooting ground. This will take the work away from buildings and avoid complaints. On the other hand, if the shooting is done under water or a sand-bag or earth cover, the noise will be greatly muffled.

Present status

At the present time, du Pont is equipped to harden castings sent to a pilot plant near its Potomac River Explosive Plant at Falling Waters, W. Va. The explosive treatment is done on a service basis with a fixed charge per pound of steel hardened and a fixed charge per pound of explosive used.

The Taylor-Wharton Company is also equipped to harden manganese-steel castings by the explosive process at its Easton, Pa., plant and is treating trackwork ordered by several railroads. According to a du Pont spokesman, several other manufacturers, as well as railroads, have expressed interest in the process.



SHEET EXPLOSIVE is in position for hardening surfaces of manganese insert.

Sheet explosive — What it is

Du Pont's sheet explosive is basically its PETN (pentaerythritol tetranitrate) explosive. It is combined with various ingredients enabling it to be produced in a sheet form which is extremely flexible and formative. It is said to be very safe to use while still developing the explosive pressure characteristic of PETN itself.

Currently, this material is available in sheets 10 in by 20 in and in thicknesses ranging from approximately 1/16 in up. For purposes of comparison, a sheet of material weighing 4 grams per square inch would be approximately 0.16 in thick. It is shipped in 50-lb cases.

For experimental purposes, the sheet explosive is designated EL-506A. It has been classified by the Bureau of Explosives as a Class A, Type 3 High Explosive under Paragraph 73.53 (c) of the I.C.C. Regulations. In classification tests, a portion was exposed to 75 deg C for 48 hr. This sample did not decompose and subsequently was detonated at its normal velocity of about 6750 meters per second.

In another test an 18-lb steel ball was dropped from a height of 10 ft onto a 2-in square section of EL-506A placed on a 1/2-in thick steel plate without detonation occurring.

When 30-caliber bullets were fired from a distance of 15 yd onto sheet explosive placed on 1/8-in thick cardboards, 2 in thick wood, 1 in thick steel plate, or a 1 in thick steel plate solidly supported, no detonations occurred. When bullets were fired onto five layers of sheet explosive attached to a steel plate with solid backing, 2 detonations and 5 failures resulted from 7 tests.

When the sheet explosive was placed in a wood fire, it burned with approximately the same intensity as the wood fire itself. In heat-stability tests at 250 deg F for 24 hr, EL-506A became slightly discolored, but otherwise was unaffected.

The sheet explosive has a density of 1.45 to 1.50 grams per cubic centimeter. It can be detonated consistently by means of a U. S. Engineer's cap, or detonators of equivalent strength.



THE EXTERIOR of the Chicago & North Western's terminal building, located at Canal and Madison streets in downtown Chicago, is getting its first sandblasting since it was built in 1911. The entire exterior was constructed of granite, including the Roman pillars

on the Madison Street side. Its color has been discovered to be a delicate shade of tan with undertones of light rose. Scaffolds are equipped with floodlights since the sandblasting of some areas is done at night.

News briefs in pictures . . .

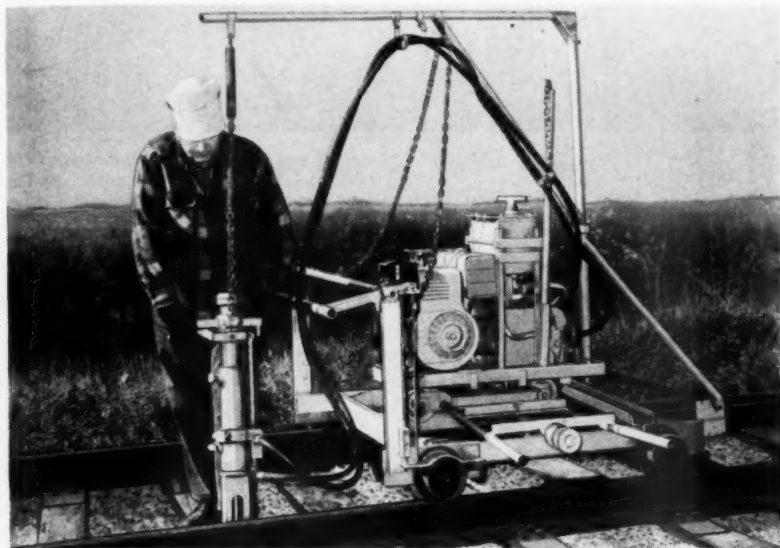


ERECTION continues on the new bridge the B&O is constructing over Arthur Kill between Arlington, Staten Island, N. Y., and Elizabeth, N. J. When completed, its 558-ft vertical lift span will be the longest of its type in the world, it is claimed.



A LAYER of riprap 3 ft thick and 10 miles long protects the relocated main line of the Northern Pacific where it skirts a new dam reservoir on the Clark river in Montana. International Payloader trucks transported and dumped 400,000 cu yd of rock and gravel.

A special round-up of new and improved machines and other devices designed to help the M/W man in his efforts to reduce maintenance costs



Four-wheel carriage for . . .

Spike puller

A LIGHTWEIGHT carriage is available for use with the Nordberg hydraulic spike puller. It consists of four wheels and an all-aluminum frame with a detachable aluminum ramp for loading the machine. An overhead swinging boom is mounted on the carriage for suspending the gun and the hydraulic hoses. The unit is equipped with a handle for pushing the carriage along the

track and which also activates spring-held brakes. When pressure is exerted on it the brakes are released. Removing the pressure sets the brakes. It is claimed that one man can easily place the carriage on the track, or remove it. The carriage was developed, it is said, to increase the efficiency of tie-renewal gangs for pulling spikes on out-of-face jobs.

To use on the job, the standard hydraulic spike puller is wheeled up the ramp and the gun and hoses suspended from the overhead

boom by means of a chain and spring arrangement. With its weight so supported the gun can be swung into position over the spikes adjacent to either rail.

Also announced is the improved BHP spike puller, which is said to have a more powerful engine and a larger volume hydraulic pump. The manufacturer states that by using the improved spike puller with the new carriage high-speed spike pulling is possible with less operator fatigue. In a recent test it is claimed that 360 spikes, four in each tie, were pulled in 30 min. It is pointed out that the improved spike puller may also be used by itself either on or off the track. Nordberg Manufacturing Company, Dept. RTS, Milwaukee 1, Wis.

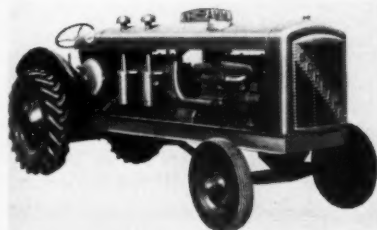


Car designed for . . .

Quick take-off

EQUIPMENT can now be removed from the track in less than one minute, it is claimed, by use of the new Teleflex heavy-duty track equipment car. Weighing 1200 lb it is said to have a carrying capacity of 4000 lb. The car has a special all-steel flexible frame which is designed to facilitate removing equipment from the track at any location. Built into the frame is a track onto which the equipment is placed. A frame for setting off the unit is connected to one side of the car and is spring-held in a vertical plane when the car is operating on the track. On the end of the latter frame is located two adjustable legs. The frame lets down to remove equipment from the track and the legs are adjusted according to the ground at that location. The equipment is then slid off the car and onto the set-off. The car is then swung to the vertical to clear the track.

For operating on the track the car is equipped with 14-in by 1/4-in steel wheels on 1 7/16-in axles with roller bearings. The wheels are set to a 96-in wheelbase. Teleflex, Inc., Dept. RTS, 11535 W. Franklin Ave., Franklin Park, Ill.



Large capacity for . . .

Tractor compressor

THE MODEL 250 Standard Pneumatractor is the newest addition to the Schramm line of self-propelled air compressors. Available with either gas or diesel power it is designed to furnish 250 cfm of air at 100 psi. The manufacturer states that this compressor meets many requirements where a 210-cfm machine is insufficient and a 315 is not needed. The Model 250 is said to operate more tools more efficiently, such as three heavy rock drills or six paving breakers at

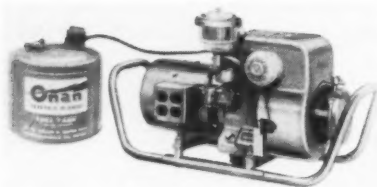
the same time. Optional equipment includes a winch, rotary cleaning brush and snow-plow blade. Schramm, Inc., Dept. RTS, 900 East Virginia Ave., West Chester, Pa.

Pre-emergence weed killer . . .

Granular herbicide

A NEW granular weed and grass killer, known as Soil Sterilant, is designed for pre-emergence application. Claimed to be non-poisonous and non-corrosive it is being offered for the control of most types of vegetation where year-long control is desired in areas, such as yards, station grounds, along industrial sidings and at points that are inaccessible to on-track application equipment. The rate of application is said to vary between 100 and 150 lb per acre, depending upon the area and the types of vegetation to be controlled. Any type of spreading equipment can be used to apply the material. The R. H. Bogle Company, Dept. RTS, P.O. Box 58, Alexandria, Va.

Products (cont'd)



THE NEW Onan electric plant weighs 140 lb and is available in two models.

Designed for dual role . . .

Electric plant

PORTABLE or emergency standby service are the designed functions of the new Onan lightweight 2500-watt electric generating plant. Weighing 140 lb the gasoline-engine-driven generator is said to serve equally well as a heavy-duty power plant on a construction site or as a source of standby power. It is furnished in two models. Model 205AJ-1P/1430 is the model for construction jobs and Model 205AJ-1M/1430 is the standby model. Both are completely self-contained and are identical in size and weight. The construction model, however, is equipped with an aluminum carrying frame. Both models deliver the same type of electric power, either straight 230-volt ac or combination 115/230-volt ac. The Onan-built all-climate generator is directly connected to the single-cylinder, 4-cycle, air-cooled, Onan-built, Model "AJ" engine for positive, permanent alinement. Both models are equipped with a separate 5-gal fuel tank with rain-tight cap. *D. W. Onan & Sons, Inc., Dept. RTS, 2515 University Ave. S.E., Minneapolis 14, Minn.*

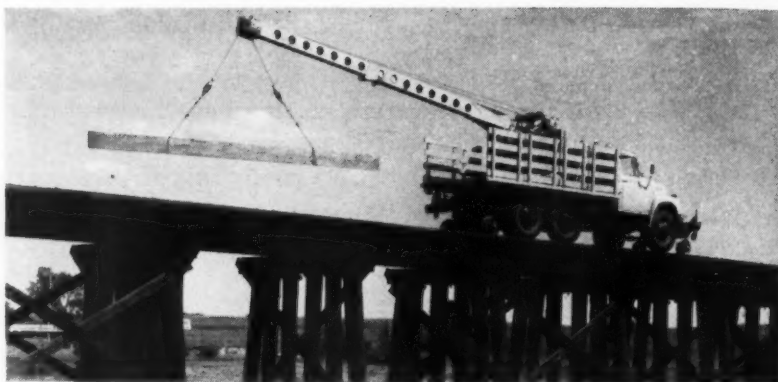


TWISTED-SHANK Spencer-Spike is shown at left. According to the manufacturer, the twist, among other things, sharply reduces abrasion of spikes, as shown at right.

Twisted shank for . . .

Track spike

A NEW TRACK SPIKE has been introduced which is the same as the conventional straight track spike except that the

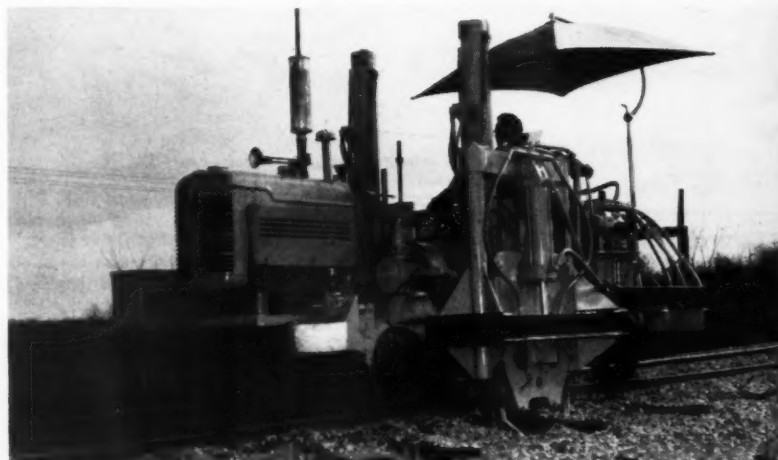


Designed for heavy duty . . .

Hy-Rail car

A NEW Hy-Rail car is available which is designated as the Fairmont A40 Series A. Designed for heavy duty it has a load capacity of 10,500 lb, less the weight of the body. Rail equipment on the new car is hydraulically operated and the drive is ac-

complished through both rear axles. The basic unit of cab and chassis, including rail equipment, can be fitted with other types of bodies. In the picture shown above, the A40 Hy-Rail car is equipped with a two-line hoist which has a telescoping boom and a 360-deg swing. *Fairmont Railway Motors, Inc., Dept. RTS, Fairmont, Minn.*



Improvements to . . .

Super Jack-All

IMPROVEMENTS to the Kershaw Super Jack-All have recently been announced by the manufacturer. The Model 3G-C is equipped with air brakes and an air horn. A center ram and a turntable are also

furnished for ease in turning the machine and for setting it off the track. A hydraulic oil cooler has been installed and the rail dogs are designed to be automatically forced under the rail. An umbrella is furnished to protect the operator. *Kershaw Manufacturing Company, Dept. RTS, 2205 West Fairview Ave., Montgomery 3, Ala.*

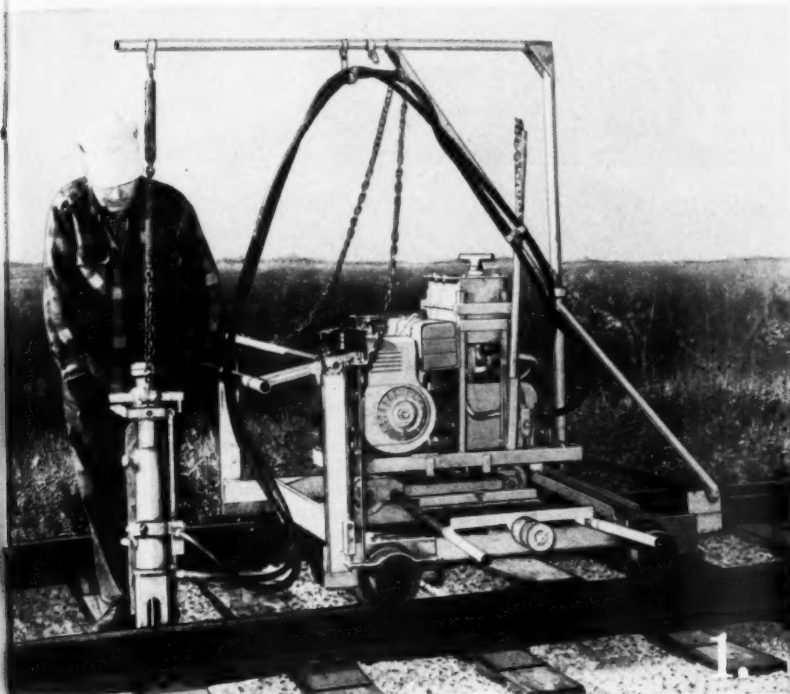
upper portion of the shank is twisted at an angle of approximately 15 deg. The function of the twist is to provide a tighter grip in the holes of the tie plate. The effect, it is said, is to "lock" the tie plate against the tie and/or the base of the rail, resulting in less wear of the spike and tie by abrasive action.

The new spike has been named the Spencer-Spike after its inventor, Lee Spencer, retired track supervisor of the Long Island. Under an agreement with Mr. Spencer the Jones & Laughlin Steel Corp. has been licensed to manufacture and sell the spike to railroads, transit authorities

and other spike users throughout the United States, Canada and Labrador.

The purpose of the spike, according to the manufacturer, is to prevent the tie plates from shifting and causing abrasion of the tie surfaces, displacement of the rails, and loss of gage. It is pointed out that, in the early development of the spike, a test was made on a heavy-duty cross-over. Previously, it was said, the track had to be regaged two or three times a year, and the life of the ties was only five to six years. Following installation of the Spencer-Spike, the life of the ties was extended to at least 15 years, according

Cut Your Tie Renewal Costs with these efficient *Mechanical Muscles*®



1. NEW NORDBERG HYDRAULIC SPIKE PULLER & CARRIAGE...

This new Nordberg machine is compact, light in weight, easy to operate. Note arm and chain support for the Spike Puller gun and the carriage push bar which also acts as a brake release.

2. NORDBERG GANDY...

A machine used to pull out old ties, insert new ties, pile or load old ties, set machines on or off the track, distribute new ties, including hauling them to the work location. A great money saver in bridge timber renewal.

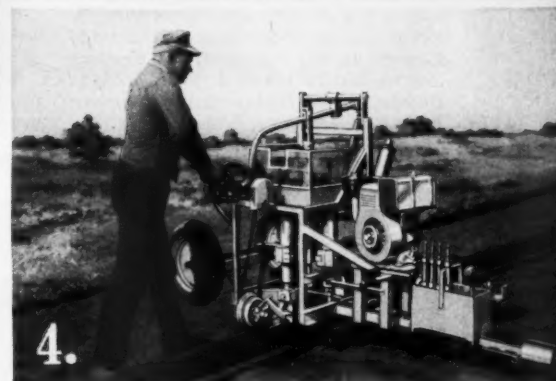
3. NORDBERG HYDRAULIC SPIKE PULLER... Simple, positive, portable machine that automatically ejects spikes. Provides flexibility and economy in tie renewal, switch renewal and bridge work—pulls spikes quickly on either rail and can be operated on or off-track.

4. NORDBERG TIE DRILL... Fastest Tie Drill on the market... drills two holes at once... one man can spot and drill 48 holes in just 2½ minutes! Centrifugal clutch provides positive power transmission.

5. NORDBERG SPIKE HAMMER...

Drives spikes fast, straight, vertical to the tie and to the correct depth. Like other widely used Nordberg "Mechanical Muscles", this rugged machine saves time, reduces costs and does a better job than is possible with other methods.

It will pay you to investigate the full line of modern, money-saving Nordberg track maintenance machinery for meeting today's maintenance needs. For further details on any or all of these Nordberg machines, write for literature.



NORDBERG MFG. CO., Milwaukee 1, Wisconsin

NORDBERG

Mechanical Muscles



Write for
**LEASING
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Products (cont'd)

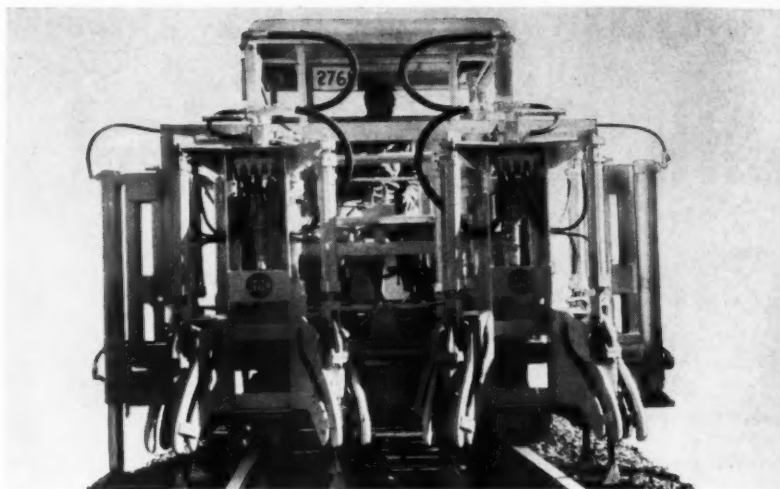
to the manufacturer. Another claim for the new track spike is that when it is used to replace conventional spikes it can be driven into the old spike holes without first plugging them. *Jones & Laughlin Steel Corp., Dept. RTS, 3 Gateway Center, Pittsburgh 30, Pa.*



Pre-assembled washers on . . .

Screws and bolts

A LINE of screws and bolts pre-assembled with helical spring lock washers is being offered for railroad use. Known as Eaton-Reliance Springtites these fasteners are available in screw sizes from No. 4 through 12, and in diameters up to $\frac{3}{8}$ in. and in any practical length. A variety of thread types is available, along with thread cutting designs which do not require pretapping the metal. The use of Springtites is claimed to eliminate the time-consuming task of putting lock washers on screws or bolts. *Reliance Division, Eaton Manufacturing Company, Dept. RTS, Massillon, Ohio.*



Versatility claimed for . . .

Tie tamper

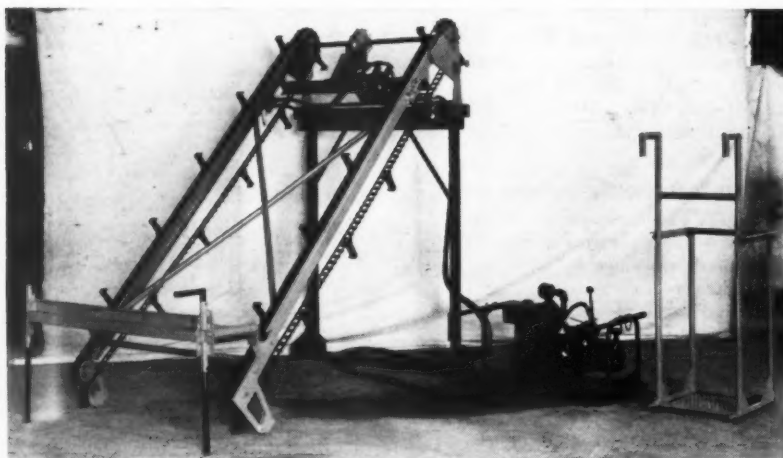
THE NEW McWilliams 8-tool tamper is a machine of intermediate size that was designed to serve as a production tamper, a spot tamper and a jack tamper. It is said to tamp the same pattern as the McWilliams 16-tool production tamper and to use the same type heavy-duty tamping guns and system of controlled pressure. The machine is propelled by a hydraulic motor through a three-speed transmission and is equipped with hydraulic rail clamps and jacks, a cross level and air-powered tamping guns. A hydraulic center lift and turntable are provided for use when reversing the unit or setting it off. A portable set-off is available as optional equipment.

When used as a production tamper the machine tamps particularly under the rail-bearing area of the tie, each of the eight

tools tamping in two positions. As a tamper of this type the new unit is said to be particularly suitable for smaller railroads where the cost of full-scale production tampers might not be justified.

Because of its split-head design the machine may be used as a spot tamper. As a tamper of this type it is said to be an efficient machine for tamping joints, low spots, switches and in yard and terminal work.

The manufacturer states that the McWilliams 8-tool tamper makes possible out-of-face tamping with one machine and a crew consisting of one operator and a foreman to sight the raise. Use of rail clamps and integral hydraulic jacks allows jack tamper operation for out-of-face raises, finish tamping the ties at the jacking points. It can then go back and finish tamping the remaining ties as a production tamper. *Railway Maintenance Corporation, Dept. RTS, Box 1888, Pittsburgh 30, Pa.*



Works in a gondola car . . .

Tie unloader

UNLOADING TIES at designated spots can be accomplished, it is said, by use of a portable tie unloader that is designed to work in a standard gondola car. Designa-

ted the Fairmont W101 Series A, it utilizes aluminum alloy to keep weight to a minimum. The conveyor itself weighs less than 300 lb; the power unit weighs an additional 200 lb. When in use the inclined conveyor and loading platform are inside the car being unloaded while the power

unit and operator's platform hang on the outside of the car. Two men in the gondola keep the conveyor fully loaded. A single operator handles the controls of the unloader. *Fairmont Railway Motors, Inc., Dept. RTS, Fairmont, Minn.*



Caterpillar brings out . . .

New tractor line

INCREASED weight, horsepower and productive ability are claimed for two completely new Caterpillar DS Tractors. The new machines are the Caterpillar Series



"That's the big boss!... I bet the railroad budgets CHIPMAN weed and brush killers now!"

Chipman chemicals and application service are backed by over 45 years of railroad weed control experience. A broad line of weed, grass and brush killers is available. Each chemical or chemical combination is formulated for specific vegetation problems. Most widely used are these trade-name products:

Atlacide • Atlas "A" • Chlorax • Chlorea • Methoxone-Chlorax
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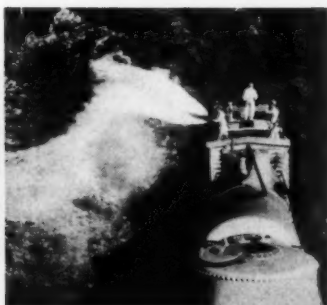
We can solve *your* weed problems with the *right* chemicals and application service. Check with us today!

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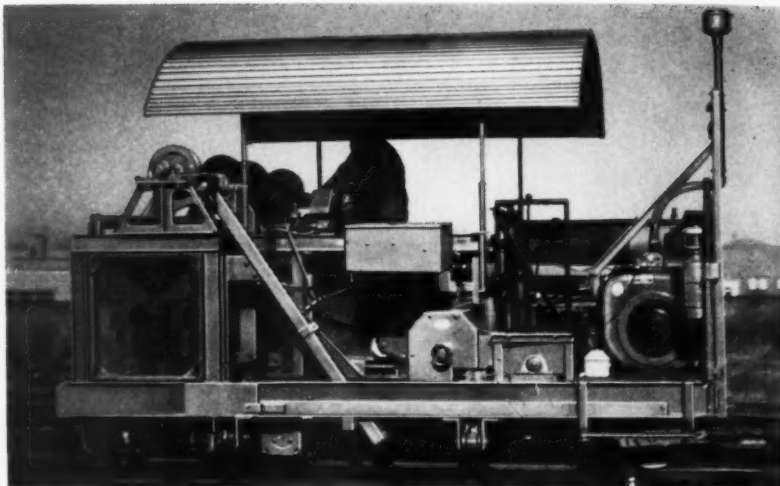


Products (cont'd)

H D8 direct-drive and torque-converter tractors and replace the previous D8 units. Length, height and gauge have been increased in the new models, which are over 4000 lb heavier than the older machines. A ground clearance of nearly 20 in has also been provided. Torque rise has been increased to 20 per cent in order to provide better lugging ability. Engine horsepower has been increased primarily by the addition of a turbocharger.

A new feature that is said to be introduced for the first time is lifetime-lubricated track rollers, carrier rollers and idlers. Once lubricated at the factory they require no further attention during their service life, according to the manufacturer. When rebuilt they are again lubricated. Increased flotation on soft underfooting is obtained, it is claimed, by the use of 28-in track shoes in place of the 26-in shoes formerly used. Other features include pressure lubrication of both the entire power train and the final drive gears and bearings with completely filtered oil, double-reduction final drive gears, dry-type air cleaner and console-mounted steering clutch.

The transmission on the direct-drive model is said to be directly reversing in all of its six speeds. Also it is said that the top reverse speed is nearly double that available on the previous model. *Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.*



Double vibrator for . . .

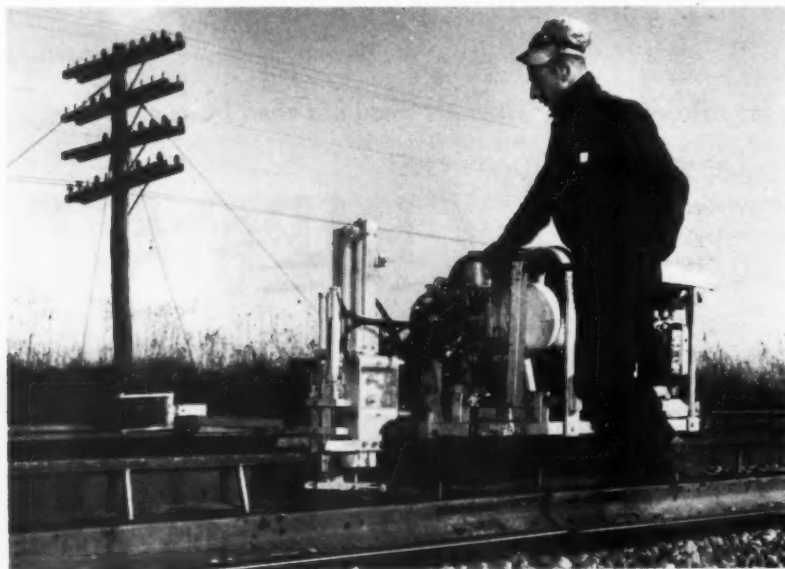
Gang Tamper

INCREASED tamping speed is claimed for the 1959 Model of the Nordberg Gang Tamper due to faster penetration and lifting of the heads. The former is said to be accomplished by the stronger action of a new mechanism, called the Double Vibrator, and by heavier tamping heads. The Double Vibrator employs two counter-rotating eccentric weights which are claimed to in-

crease the vertical vibration and impact of each tamping head and bar while eliminating horizontal vibration. Larger volume hydraulic pumps are said to speed raising of the tamping heads.

Other improvements stated for the 1959 model include a 65-per cent increase in power through use of a 56-hp Model VR4D Wisconsin air-cooled gasoline engine, simplified head-lifting arrangement and operator controls for tamping head operation, operator's seat, new mechanical drum-type foot-operated brake on the front axle and a bond wire insulating arrangement that is designed to make the machine either insulated or non-insulated.

A new two-piece tamping bar design, available in three sizes, is claimed to permit quick and easy change of bar ends for high lift, low lift or smoothing. *Nordberg Manufacturing Company, Dept. RTS, Milwaukee, Wis.*



Improvements made to . . .

Spike setter

A ROTARY air compressor that is said to be capable of producing 20 cfm of air at 120 psi has been added to the Racor Dual Spike Setter. This type is said to have the ability to operate for long periods of time without loss of efficiency, and to feature simplicity of design, light weight and compactness. Other improvements to the machine are claimed to enable it to set spikes

deeper and straighter than the earlier model.

The improved Spike Setter operates in the same manner as its forerunner. The air compressor is driven by a gasoline engine and two spikes are set simultaneously. Spikes are first placed in the tie-plate holes so that they lean inward towards the rail. The air-operated positioners straighten the spikes and hold them vertically until they are struck one hard blow which drives them down to a firm setting, even, it is said, in

hardwood ties. The manufacturer claims that the machine will set two spikes in approximately 2 sec. It can be manually removed from the track without difficulty, it is claimed, due to its relatively light weight. *American Brake Shoe Company, Railroad Products Division, Dept. RTS, 155 N. Wacker Drive, Chicago 6, Ill.*



Introduces watertight . . .

Wood bolts

BOLTS that are claimed to be watertight are now available for use in wood construction work. They can be furnished with square, hexagonal or speed nuts. They may be furnished with slotted heads for applications where the use of a screw driver is required due to the inaccessibility of the nuts for wrenching. *Pittsburgh Screw & Bolt Corp., Dept. RTS, Pittsburgh 30, Pa.*

MODEL 441

PETTIBONE



SPEED SWING

THE MACHINE OF MANY USES

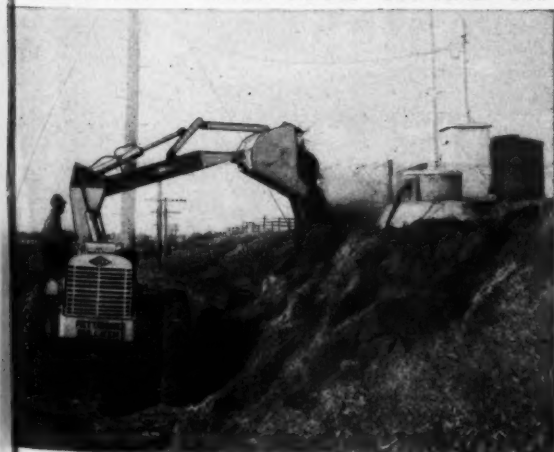
**180° SWING LOADER • 4 Wheel Drive • 4 Wheel Steer
BUCKET • TOTE CRANE • FORKS
Off-Track Machine... One-Man Operated**



LAYS RAIL • LIFTS TOOLS ON AND OFF TRACK



ROOTS AND LOADS TIES



BUILDS SHOULDERS • STOCK PILES



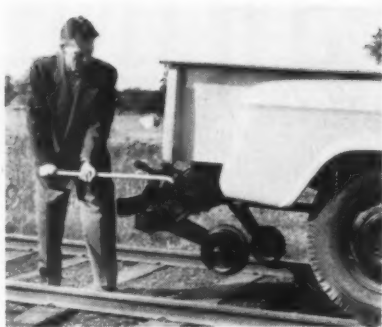
REMOVES SNOW FROM STATIONS, YARDS, TRACKS

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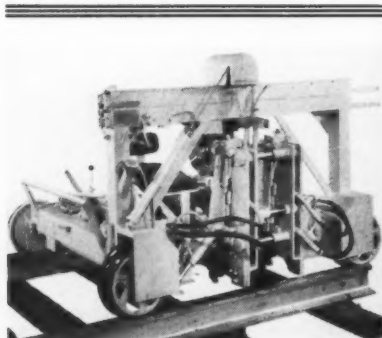
Products (cont'd)



Manual operation for . . .

Hy-Rail wheels

MANUALLY OPERATED Hy-Rail equipment is now available. The equipment is similar to that used on the A30 Series C units except that the guide wheels are raised and lowered manually for operation on either highway or railroad. In general the equipment is designed for vehicles in the ½ and ¾-ton class. A toggle linkage has been provided that is claimed to make it easy for one man to place the guide wheels in the correctly loaded on-track position. *Fairmont Railway Motors, Inc., Dept. RTS, Fairmont, Minn.*



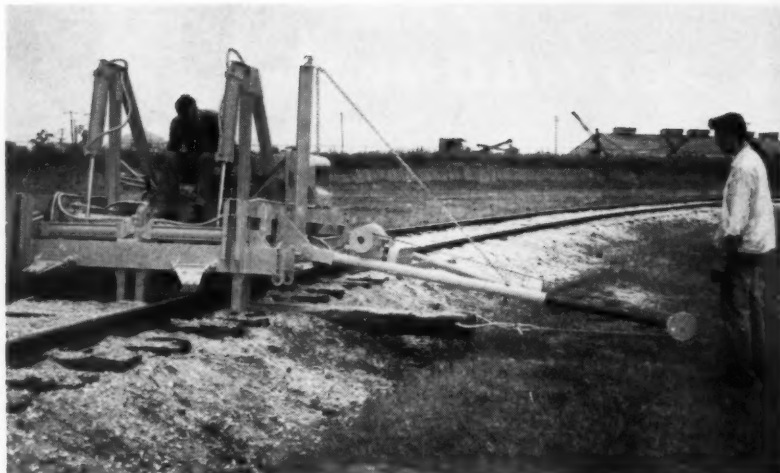
Hydraulically propelled . . .

Anchor applicator

ALL POPULAR makes of rail anchors can be applied, one or two at a time, by using the Racine Anchor-Fast, it is claimed. The manufacturer states that the machine has been completely redesigned and that the heavy-duty production applicator applies 8 to 14 anchors per minute depending on roadbed conditions. Also that they are installed with complete safety, greater holding power and more reuseability.

During application 1000 lb of pressure is said to hold the anchor against the tie while a patented rocker arm contacts the anchor over a broad area. The machine is propelled at speeds up to 15 mph.

A centrally located jack cylinder allows the unit to be pivoted 180 deg to work on the other rail, or 90 deg to be set on the "off-track" channels which are carried in the upper machine frame. *Racine Hydraulics & Machinery, Inc., Dept. RTS, 1524 Frederick St., Racine, Wis.*

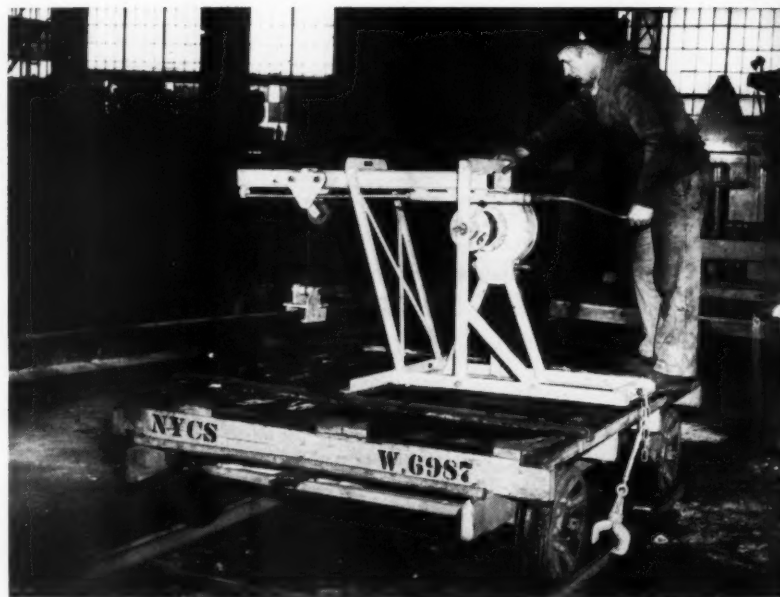


New cable drum on . . .

Tie replacer

SEVERAL IMPROVEMENTS have been made to the Kershaw Tie Replacer, the combination machine that is used for rail lifting, tie removing, tie-bed scarifying, tie replacing and crib scarifying. One improvement is the utilization of a new cable

drum to prevent backlash. The Model IHS-B is also furnished with a center ram and a turntable for ease of turning the machine and for setting it off the track. An emergency hydraulic system has also been incorporated into the improved machine. *Kershaw Manufacturing Company, Dept. RTS, 2205 West Fairview Ave., Montgomery 3, Ala.*



Push-car mounted . . .

Rail handler

A TWO-MAN section gang can handle a 39-ft rail of any weight, it is claimed, by using the new portable Pullman-Standard Rail Handler. It is also stated that the crane can be used for handling small and medium-sized switch frogs. Constructed of all-welded structural steel and weighing 290 lb, it is designed to be placed on any standard push car without the requirement of a special mounting. It is held in place

by a hook and chain arrangement, one end of which is fastened to the base of the Rail Handler and the other end hooked to the track rail. A hand-operated winch, which is said to require only one man for its operation, is used to lift the rail. A transverse screw, which extends the length of the boom, then is used to move the rail either outward or inward for placing on the ground or on the deck of the push car. *Pullman-Standard Car Manufacturing Company, Dept. RTS, 200 South Michigan Ave., Chicago 4, Ill.*



and now **EXPLOSION- HARDENING**

TAYLOR-WHARTON, THE FIRST COMPANY IN AMERICA, To Produce Hadfield's Manganese Steel—To Produce Manganese Steel for Railroad Service. NOW THE FIRST COMPANY COMPLETELY EQUIPPED TO PRODUCE EXPLOSIVELY HARDENED MANGANESE STEEL FOR RAILROAD AND INDUSTRIAL USE.

This crossing demonstrates the greatly improved wear characteristics of manganese steel castings that have been hardened by the Taylor-Wharton VIH* method. Installed in 1957, it has been exposed to severe conditions. The user reports excellent maintenance-free results, since velocity impact pre-hardening of the crossing components has prevented the batter of points and peening of metal in flangeways. Tests in both the laboratory and in the field indicate that this new method will increase the service life of such installations as much as five times.

Write today for further details.

*Velocity Impact Hardening

TAYLOR-WHARTON CO.

DIVISION OF HARSCO CORPORATION

Established 1742

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PLANTS: Cincinnati, O.—Birmingham, Ala.—Easton, Pa.



**Perfected by
Mannix...**

**Proven by all these
railroads!**



MANNIX PLOW AND SLED

These railroads have proved that use of the Mannix Plow and/or Sled is "maintenance of way the modern way!" Inquire about a special 16 mm. film showing . . . see why this Mannix "undertrack" equipment can save you time and costs in your resurfacing program. Ask about Mannix service and the Mannix rental plan. A representative will call if you wish - no obligation!



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**To be answered
in June**

Do you have an answer to any of the questions listed below? If so, send it in. Payment—based upon substance and length—will be made for each published answer. If you'd prefer that your name be withheld, we'll gladly comply.

DEADLINE: April 30

- ▶ 1. Should the building up of rail ends by welding be programmed on the basis of the average depth of batter or by years in service? If by batter readings, what depth influences the decision to weld? If by years, how many? Explain.
- ▶ 2. What is the best material and most economical method which can be used to replace stone tunnel linings under traffic? Explain. Should the new lining material be varied to suit wet and dry tunnel conditions? Why?
- ▶ 3. With consideration to the cost of train crews as well as track gangs, is it more economical to move surfacing equipment to a new work location 80 to 100 miles distant under its own power, by train, or by railroad-owned or rented highway equipment trailers? Cite examples of comparative costs.
- ▶ 4. How often should ladders and grab irons on buildings, stacks, towers and tanks be inspected to insure their being in sound condition? How should they be inspected? Who should make the inspection and what should he look for?
- ▶ 5. On what types of off-track equipment units is it desirable to install flanged guide wheels? Explain advantages.

Send answers to:

**What's the Answer Editor
Railway Track & Structures
79 West Monroe Street
Chicago 3, Illinois**

Do you have a question you'd like to have answered in these columns? If so, please send it in.

Lubricators in winter

Is it practicable to keep rail-and-flange lubricators in service during winter months when heavy snow conditions exist? Explain.

Keep them in service

By C. L. BOLAND
General Roadmaster
Milwaukee Road
Chicago, Ill.

There is a certain amount of extra maintenance required in cleaning the snow from the movable parts occasionally to keep lubricators working properly.

At the start of the winter season it is important that the oil flow be adjusted to allow for lower temperatures, and the slower movement of the grease.

We do not disconnect any lubricators during the winter season. We feel that the benefits received more than compensate for the small amount of labor required in maintaining the lubricators.

Traffic will determine

By YARD FOREMAN

It is my opinion that the amount of traffic carried will determine whether or not rail-and-flange lubricators

should be kept in service in the winter.

The wheels of cars and locomotives cause wear on the rails in winter as well as in summer. Hence, winter lubrication is beneficial. Also, all the other reasons for installing these lubricators, such as reducing gaging, wheel wear, fuel consumption and the tendency for wheels to climb the rails, still apply.

The same type of lubricant is used in winter as in summer so there is no need to remove the old lubricant to put in another. The only thing required is to reset the adjustments of the actuating ramp and the grease distributing bars to compensate for the lower temperatures, which slow up the movement of the grease. Of course, the machines should always be kept cleared of snow.

However, if there is a marked decrease in traffic in winter, as on an ore-handling road, then it is advisable to go to the expense of removing the lubricators from the track. This would prevent possible damage to them from snow plows, flangers and plows with ice-cutting teeth.

Insuring vertical pile driving

When using a pile hammer suspended from the boom of a crane, what measures should be taken to insure vertical driving? Describe fully.

Use a template

By R. I. SIMKINS
Assistant Engineer of Bridges
Atlantic Coast Line
Wilmington, N. C.

In general on the Atlantic Coast Line, concrete piles are driven with a pile hammer suspended from the boom of a locomotive crane without leads in the manner described in your question. We have obtained good results by

placing the pile in proper location, either in vertical position or on proper batter, and securing it in position by means of a template placed as high as consistently possible above the ground line before driving.

Most of our work of this nature consists of replacing old structures in the same location, and our practice is to use the old structure to support the

(Continued on page 60)



Clear the way of Bermuda grass

When Bermuda grass and trumpet creeper get a foothold, you're in for trouble and expense all along the right-of-way. In some places, they'll interfere with proper drainage, speeding up tie-rot and weakening the roadbed. In other locations they'll cause heaving or churning. And when it comes to tie replacement, they'll double your time and trouble.

That's why many modern railroads make short work of getting rid of both of these growing problems . . . with specialized Dow vegetation control chemicals.

Radapon®, for example, is especially designed to knock

out tough, deep-rooted grasses like Bermuda. Sprayed on the leaves, it works down through the plant system and into the roots, breaking the grip of this troublesome grass for good. For control of trumpet creeper (cow itch, in some areas), 2-4 Dow® Weed Killer, Formula 40® does an effective job at low cost—and kills an army of other broad-leaved weeds at the same time.

These are only two of the specialized line of Dow chemicals that enable you to keep ballast, berm and rights-of-way clearer than ever before . . . at a cost that makes economy-minded management beam.



and trumpet creeper . . . with Dow chemicals

For more information about how Dow grass, weed and brush killers have become a vital part of modern railroading . . . and for the name of a qualified applicator . . . write to us today. You'll also receive a copy of an interesting new brochure, "Special Report to Railroads". THE DOW CHEMICAL COMPANY, Agricultural Chemicals Sales Dept., 202EG-3, Midland, Michigan.



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RAILWAY TRACK and STRUCTURES

MARCH, 1959

50



Save time and expense on right-of-way maintenance

handle scattered clean-up with 1-man D 'Pull*

NOW much of the load-haul-and-spread operations on your right-of-way maintenance can be a one-man, one-machine operation—with the LeTourneau-Westinghouse D Tournapull® Handyman. This self-propelled, rubber-tired scraper isn't tied to rails. 138 hp, 9-yd "D" can be push-loaded, or will self-load up to about 75% of capacity. It travels shortest route to work—via right-of-way, highway, or cross-country—at speeds to 29.5 mph.

Once the 'Pull operator has his orders, he's on his own—doesn't have to wait around for a crew, work train, or dispatcher orders. Nor does he have to wait for main line clearance. He goes directly to his work, at roading speeds to 29.5 mph... gets into action as soon as he arrives!

Tires float over obstacles

Low-pressure tires of D 'Pull provide a smooth-rolling surface for travel. Yet, tire lugs bite in deep when pulling power is needed. These 5'-high, 1½'-wide pneumatics flex over rails, ties, and other obstacles with a cushioning action... roll across tracks or over switches without causing or taking damage.

For close work in confined quarters—a common situation on right-of-way embankments—"D" has high maneuverability. This L-W Handyman turns 180° in 24'8"... eases through narrow 8' cuts... travels via highway in all 48 states without permit. Electric controls are quick and positive.

Interchange hauled work units

A dozer blade is available for the D 'Pull. The hauled scraper can also be interchanged with a Rear-Dump body behind the same prime-mover, for hauling shovel-loaded material. Or with a lift-and-carry crane, with an arch suitable for hauling rails, poles—equipped with 61,500-lb-pull electric winch. Also available are interchangeable flatbed and side-dump haulers.

Compare with present methods

Get all the facts on the versatile, mobile 138 hp D Tournapull now. Compare its work and travel performance... its manpower requirements... with whatever combination of men and machinery you may be using at present. Write for complete specifications on the versatile "D".

*Trademark DP-1832-RR-2/3



LETOURNEAU-WESTINGHOUSE COMPANY

Railroad Sales Division
Peoria, Illinois

A Subsidiary of Westinghouse Air Brake Company
Where quality is a habit



What's the answer? (cont'd)

(Continued from page 57)

template. Sometimes it is possible to set several piles in the template before driving, but this practice is restricted by train movements.

In driving piles with a heavy batter, a special sling for holding the pile hammer on batter may be required. We have, however, driven piles with batter of 2 in 12 without special rigging.

In unwatered locations preboring holes 5 to 10 feet deep is helpful. But in soils prevailing in this area a template is still required to keep the pile from "lying down."

On locations where timber trestles have been redriven several times, we have considerable trouble with old piles which have been cut off or broken off at the ground line. We are not always successful in driving piles exactly vertical or on proper batter. However, we have experienced the same difficulty in such locations with pile hammer in rigid leads.

Brace the leads

By A. S. KREFTING
Assistant Chief Engineer Bridges & Structures
Soo Line
Minneapolis, Minn.

The best "measure" that I know of is to use driving equipment that will make it possible to guide the piling and to apply corrective pressure at the butt of the pile if it tends to go out of line when driving.

It is our usual practice to drive piling with steam hammers in leads suspended from the boom of either locomotive or crawler-type cranes. The attachment of the leads to the boom is so arranged as to prevent rotation in a horizontal plane and the lower end of the leads is braced back to the machine with adjustable struts. The use of this equipment will make it possible to hold each pile in a "plumb position" as the driving starts and, through movement of the leads, to put corrective pressure on the butt of any pile that tends to go out of line. If the piling are to be driven with blunt ends, the tip should be cut off square with the axis of the pile. If pointed, the taper on the pile should be uniform, as otherwise the piles may drift.

When driving piling that will be in



Five years ago, Matisa introduced the first production-line rail welding equipment to America for tests with American rail and under the tremendous battering of American schedules and heavier axle loads. The results are embodied in this report on...

Welded Rail:

A Four Year

Progress Report

The story of welded rail goes back many years. Early experiments were abandoned as tedious and costly. Then, Matisa Equipment Corporation began making safe, cheap welds fast.

With this head start, the Matisa story has since been inseparable from the story of every advance made in the welding of rail.

MATISA EQUIPMENT CORPORATION
1020 Washington Ave., Chicago Heights, Illinois

It took Matisa a year of testing and re-building the equipment brought over from Europe to finally produce safe welds quickly and inexpensively; but in the following years, improved techniques and redesigning of the original equipment definitely indicated a need for basic changes in the original design, to be incorporated by the manufacturer. Matisa requested these improvements, but for reasons which they could well understand, the manufacturer of the old original flash butt welder decided not to alter the entire design for a small segment of its market.

Improvements Built into New Machine

Matisa then submitted designs to other manufacturers and made arrangements to produce flash butt rail welding with equipment incorporating all the improvements developed in 4 years of actual on-track welding.

This is the equipment with which Matisa will be establishing new horizons during the year—but already, with re-built equipment, Matisa has at the present time 140,000 welds in track, with a history of no weld failures.

Now known as *Matisa Flash Thoroweld*, the process is comprised of refined techniques and a re-engineered plant which are today efficient beyond that of any equipment available.

Today's Performance

For example, recent improvements have tripled the life of grinding wheels; truly efficient adaption for the use of commercial power is now available; elimination of mechanical shearing devices has not only made a safe weld safer, but has stepped up production by 25%, and required personnel has been reduced. **The present operation produces almost twice as many welds per man hour as any other known method or equipment.**

Three years ago, Matisa had perfected production-line techniques to the point of producing 80 welds per 8-hour shift; today, Matisa has produced 158 welds per shift—and has produced 285 welds in 16 hours. These are peak performances, but the equipment *consistently averages* well over 100 welds per shift.

New Developments Here Soon

But the Matisa program continues. Matisa, fiercely guarding its 4 years head start in experience, will soon step this rate up—and smaller roads with not enough welds to warrant leasing the equipment will benefit, too. New equipment, new services, new techniques are at the present moment being rushed to completion.

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What's the answer? (cont'd)

the open for some distance below the base of the driver (as would be the case when driving through the deck of an existing bridge), it is often desirable to install temporary wood template frames at the ground line and at some point below track level to guide the piling. This procedure is particularly desirable when driving concrete or other large piling in locations where the driving will be difficult.

Several methods used

By P. B. COLLIER
Superintendent of Scales
Missouri Pacific
St. Louis 3, Mo.

When driving piles with a hammer suspended from a crane boom, many methods have been used to insure vertical driving.

(1) Timber pile guides may be used. This operation requires a hole in which to start the pile.

(2) Swinging leads are used in many cases. Guy lines may be used on leads to insure vertical driving.

In some locations it would be practical to drill a hole 10 to 15 ft deep, set the pile in the hole and then drive.

The type of soil in which the pile is being driven usually will govern the system to be used.

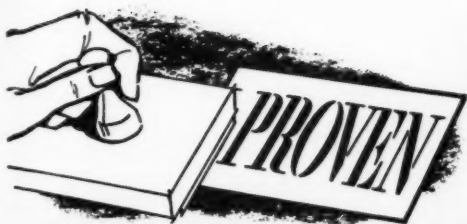
Why stagger rail joints?

Why is it necessary to build railroad tracks with the joints staggered at the midpoints of the opposite rails? What are the advantages or disadvantages of having the joints opposite any other point of the rails as long as they are not supported on the same ties? Explain.

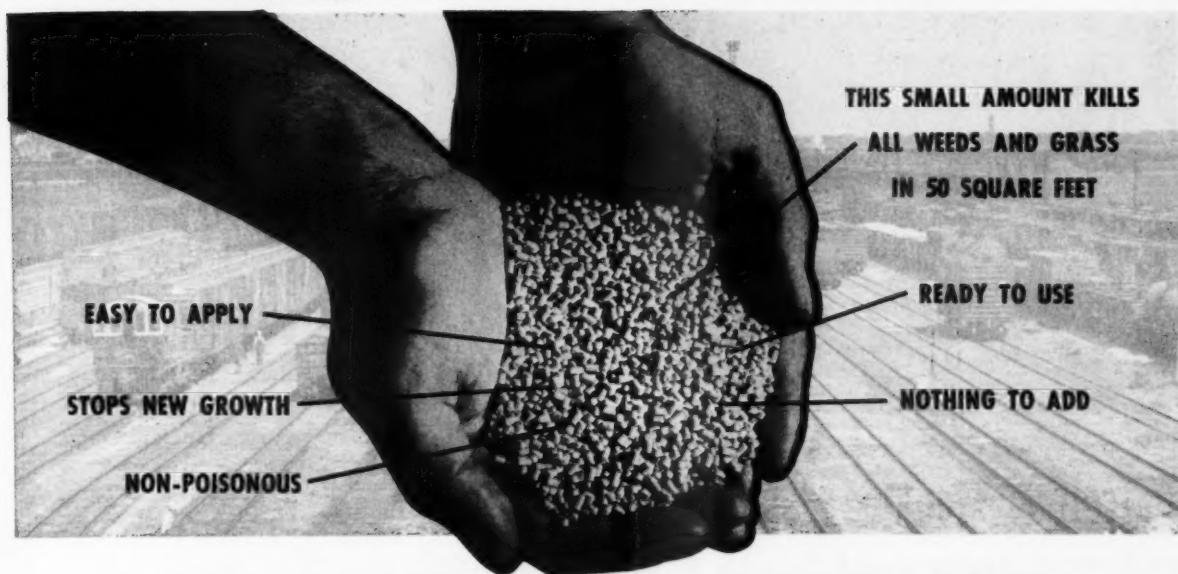
Sometimes not necessary

By H. R. SCHRADER
Track Supervisor
New York Central
St. Thomas, Ont.

With rails at weights of 127 lb per yard and heavier and with reinforced splice bars, the need no longer exists to stagger rail joints. With rails lighter



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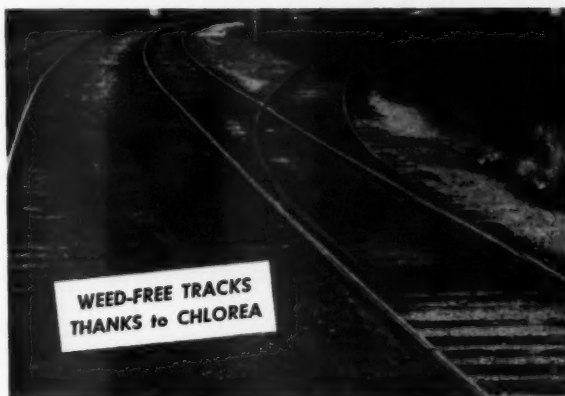
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He adds, "We began using the crane two years ago to speed handling of ties, poles and timber in our pressure treating process. It proved so versatile and efficient that we use it for all kinds of materials handling."

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What's the answer? (cont'd)

than 105 lb and having straight splice bars, the joint is the weakest spot in the rail. When the joints are opposite and bearing on the same ties, low joints give the trains a roller-coaster effect at any speed. This is not conducive to smooth riding.

When joints of reinforced bars are laid opposite each other, some joints can be eliminated at crossings, switches and frogs. Also, the track can be relaid in panel sections, which is an advantage at derailments, washouts, etc., because the track has to be rebuilt fast. Where rail is to be welded in the track, there would be no reason to stagger the joints. It follows that track with the joints opposite can be rebuilt and maintained more economically than with staggered joints.

Provides uniform structure

By J. A. WHITE, JR.
Construction Engineer
Norfolk Southern
Norfolk, Va.

In a track the rail is assumed to be a continuous beam. Therefore, it is desirable to have the necessary joints located at such points that will provide as uniform and rigid a structure as possible.

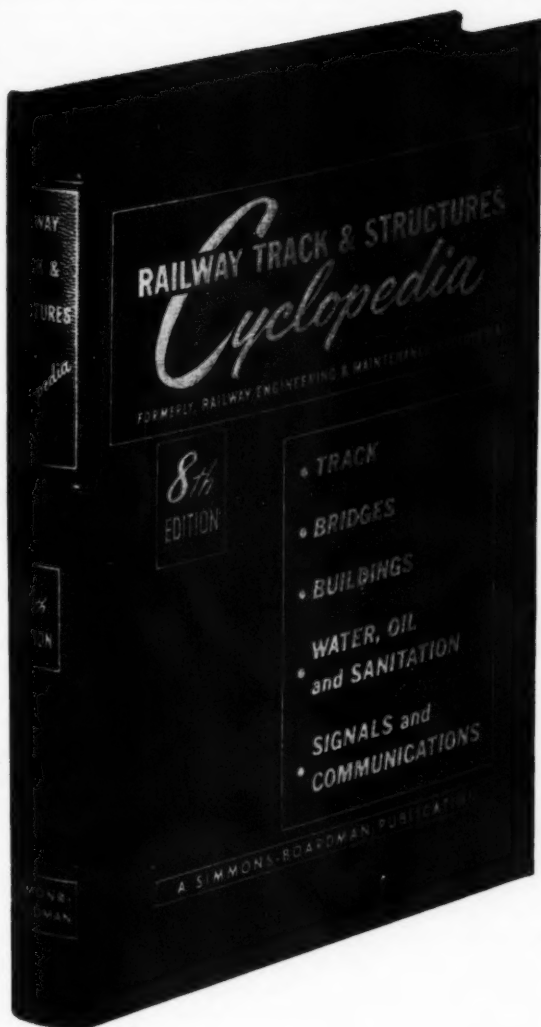
Staggering the joints at the midpoints of opposite rails provides the best solution as yet to this situation.

However, a disadvantage of having the joints alternately spaced at the midpoints on opposite rails is that, in track areas where there may be a series of low or battered joints, the rolling equipment, especially cars with a high center of gravity, may start rocking. This may continue until the oscillation becomes great enough to rock the wheels off the rails.

But the advantages greatly outnumber the disadvantages. Joints opposite each other would make for rougher riding where the wheels would be hitting both joints at the same time, increasing the wear and tear on track and equipment.

Gaging, lining and surfacing at the joint would be unnecessarily complicated because of working from low joints rather than from the midpoint of the opposite rail.

Where joints are side by side or very near each other, a joint failure would



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generously illustrated pages give you information on every phase of engineering and maintenance, signals and communications and other details regarding the railroads' fixed property. Six sections totalling 80 chapters include: Track; Signals; Water, Oil and Sanitation; Buildings; Bridges and a General Section. Directory of products and index of trade names in addition to general subject index.

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What's the answer? (cont'd)

break the continuity of the rail even more than if the joints were separated.

Since the joints are the weakest part of the rail structure, having them separated is essential for safety, ease of maintenance and smoother riding. Therefore, the midpoints provide the maximum separation and lends to a more continuous and uniform structure.

Has many advantages

By R. H. MILLER
Maintenance Engineer
Lake Superior & Ishpeming
Marquette, Mich.

Of late, I have had to contend with the problems of square joints on a good many miles of light-rail main line. I am of the opinion that the disadvantages far outweigh the advantages of this type of construction. Historically speaking, this track was built in such a manner because the maintenance and

construction officers felt that there would be less "rolling" of rolling stock. Or, in other words, good line and cross level were considered essential while good surface was secondary.

Now, with a good many millions of tons having traveled over this type of track, the joints have become bent. Also, the rail ends are battered far more than would have happened if staggered-joint track had been constructed. If this condition is allowed to get bad enough, one finds that diesel locomotive wheels slip when they hit the square joints on a grade. In extreme cases, a train will have to be doubled. If the track had been in good shape the train could have gone over the top in one cut.

Again considering light-rail main track, it often does not have sufficient anchorage to prevent movement of the rails. In many cases, both rails will not move at the same rate, nor even in the same direction. This makes for skewed ties at the joints. When making tie renewals one finds himself puzzling over how to space four or five ties at the joints, rather than the one or two with staggered-joint track.

Needless to say, spot surfacing with square-joint track is more of a problem than with staggered-joint track. This is because a pair of wheels "pumping" a pair of joints will produce more low joints than one wheel "pumping" one joint.

One place where square joints work to an advantage is on movable mine-stockpile or shovel tracks. In such cases, the track is laid in early spring, along the toe of the stockpile, and is dismantled, or lined out late in the fall to provide room for winter stocking. Prefabricated panels or square-jointed track, well constructed, can be quite useful for this application.

Joints staggered at any other points than specified by AREA should not be permitted on permanent tracks, as there will not then be the present uniformity of design and construction which makes for standardized construction, easier surfacing, etc.

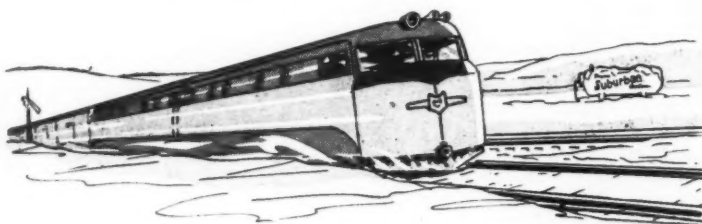
Gives better riding

By SUPERVISOR OF TRACK

From general observation and information obtainable it would appear that a great number of railroads, if not the majority, have set as their standard the placing of joints at the

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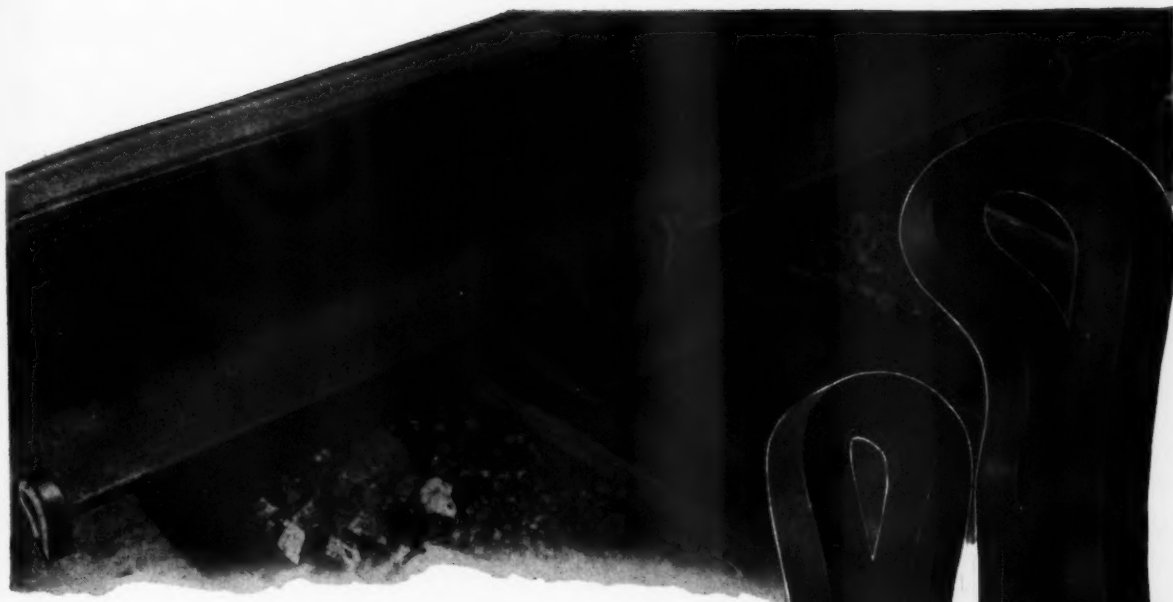
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Rail Lock Spikes offer the same design as Gage Lock Spikes, but are not offset at the plate surface. The throat protrudes 1/16" — resultant pressure binds the spike against the rail base edge. Play is eliminated between the tie plate shoulders — the rail is held to a true gage.

Forward-looking management can extend the cycle of track structure by using Lock Spikes. One regaging operation costs more than the initial cost of installing Lock Spikes. Specify spikes having a low annual cost—Specify Lock Spikes.

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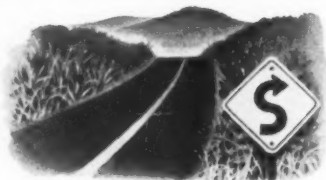
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What's the answer? (cont'd)

midpoints of opposite rails. The purposed of this, of course, is to keep the joints as far from each other as possible, it being an accepted fact that the joint is the weakest link in the track.

Severe strain on rail joints caused by blows of passing wheels, uneven surface under joints, and side thrusts from wheel flanges, combined with the expansion and contraction of rails, result in the joints being a critical point in track maintenance.

Among maintenance-of-way people it is generally appreciated that the track at the rail joint requires resurfacing before the other portion of the rail, and at more frequent intervals.

On track over which high-speed passenger or heavily laden freight trains pass, the staggering of joints at midpoints results in better riding conditions. This assumes, of course, that the joints are properly maintained for alinement and surface, all bolts are kept tight, the joints are properly supported on ties and rail-end batter is held to a minimum.

The advantages or disadvantages of having the joints opposite any point of the rail other than at mid-section are problematical. To place them too far off center, that is, less than 10 feet from the end of the rail, could result in waste of rail which most certainly could not even be envisioned at today's economic level. This arrangement would also distort any scheme of uniformity which might be desired.

One of the main advantages of midpoint spacing seems to lie in the fact that, for the most part, only full-length and half-length rails are required. The various other lengths can be sent to the shop for the manufacture of frogs and switch points. Again, with only these two lengths, you have a definite pattern of uniformity. There will be cases, of course, where due to fixed location of turnouts, insulated joints, etc., some odd lengths of rail will accumulate.

The placing of joints directly opposite on the same ties, or so closely staggered that joints rest on adjacent ties, appears to have a distinct disadvantage. Unless the joints are over-maintained, traffic's concentrated pounding will result in very poor riding conditions and costly maintenance. The resulting low joints will require constant spotting and will prevent ever obtaining a good-riding track.

Heating plants for buildings

What are the advantages or disadvantages of having one heating plant serve two or more buildings? Explain.

Central plant is good

By A. W. CRUIKSHANK
Plumbing & Heating Supervisor
Delaware & Hudson
Green Island, N. Y.

The advantage of a central heating plant for serving two or more buildings is that one unit involves a lower investment cost than a number of units, each serving a separate building.

Central heating plants are desirable because of the following inherent characteristics:

- (1) Elimination of duplicate heating units and equipment.
- (2) Concentration of fuel storage.
- (3) Low operating costs.
- (4) Low maintenance costs.
- (5) Ease of operation.
- (6) Control of mechanical equipment and fuel consumption.
- (7) Allows closer supervision and collection of cost data.

In view of the above listed advantages of a central heating plant, there are limitations in heating small plant buildings. Buildings of less than 5000 sq ft of radiation and somewhat remote from a central plant may be more economically heated with their own heating units. A careful study would determine the means and economy for heating remote buildings.

Saves with one boiler

By F. DURESKY
Supervisor B&B
Chicago & North Western
Huron, S. D.

Out here in the Dakota country, where the winds do blow and at times the weather is real cold, I suppose most people would say "none of that for me." The main reason no doubt would be because of the cost of heating.

The railroad has its problems with heat because in most cases one heating plant is required for each building. The disadvantages of one heating plant arise because of the distances between the various buildings. An exception is at our division headquarters where we feel it is advantageous to heat more

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What's the answer? (cont'd)

than one building. There we installed two 150-hp package boilers that are operated automatically on natural gas on an interrupted service basis. The installation is so equipped that we can switch to oil in about one hour's notice.

This plant heats the division offices, one grocery warehouse and office, a passenger station, express and baggage room and coaches that are left at our

station for heating. The steam is transmitted through four-inch lines at high pressure. It is reduced where the steam leaves the transmission line to go into the buildings to serve radiators. The transmission lines are approximately 1,000 ft long. We have a condensate return line from these buildings and the condensate is used as makeup water for our boilers.

These boilers were installed in the summer of 1957. At that time we did think of installing a boiler in each

building, but are glad we didn't. We are having such good luck with our installation. It is practically trouble free and is so economical we feel that this installation has advantages.

Here are the costs for the 1957-58 heating season:

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These boilers replaced hand-fired coal-burning boilers. We estimate that to fire the coal-burning boilers the cost was about \$24,000.00 annually.

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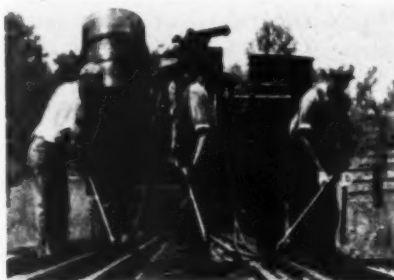
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Likes electrical heating

By E. H. GOGI
Supervisor Bridges & Buildings
Southern Pacific Company
Portland, Ore.

The question of heating buildings from centralized heating plants which would serve two or more buildings depends a lot on the locality in which the heating is to be done. I can only speak for the northwest portion of the country, where our heating problems are not too severe.

Many things are to be taken into consideration when centralized heating is contemplated. The cost of installation, maintenance, and insulating heating ducts for various buildings must be considered. Most of our old type heating, where we had a central boiler room using a high-pressure boiler, required constant attention of a fireman or attendant and a separate fireproof structure to house equipment.

With the low-pressure steam boilers now being used, this expense can be eliminated and it appears logical to serve two or more buildings without conduit runs exceeding 30 ft per building.

In many of our buildings where we have small office rooms, it is the most economical in the Northwest to use individual electric heaters, and we have found that large savings can be made from their use.

At the present time in this locality, we have used very little natural gas. We are, however, using some bottled types of gas where individual gas heaters are installed in each building.

In conclusion, we believe electricity is still the cheapest type of heating for the Northwest. It cuts down on initial and maintenance costs.

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This Racor Spiking Team can do the work of a dozen men

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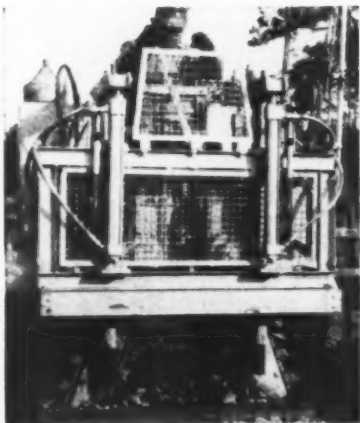
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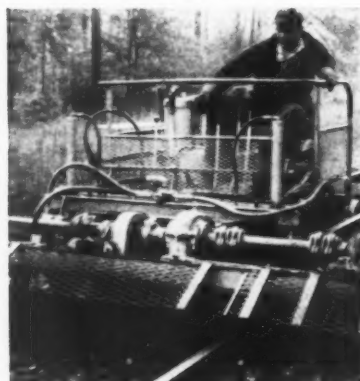
Aeroquip Hose Lines have the rugged dependability needed for long service on hydraulic maintenance equipment. And when replacement lines are needed, Aeroquip Hose and Reusable Fittings are field assembled quickly, right on the job. Downtime is held to a minimum and replacement costs are reduced.



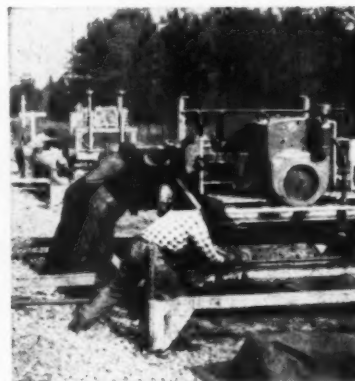
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Ties are cut and spikes pulled hydraulically by this portable machine. Aeroquip High Pressure Hydraulic Hose Lines give long, trouble-free service for Seaboard.



This bed scarifier is another of Seaboard's mechanized units with dependable Aeroquip Hose Lines. Tie pullers, ballast tampers and power jacks also use Aeroquip Hose Lines.



Seaboard Air Line Railroad maintenance men designed these set-offs for easy handling of maintenance equipment removed from the tracks.

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What's the answer? (cont'd)

Spot tamping vs. out-of-face lifts

When spotting track with a production tamper, what precautions must be taken to prevent leaving "hanging" ties behind the work? Should the practice of spotting track be abandoned in favor of making light out-of-face lifts? Explain.

Wants no spot surfacing

By ENGINEER MAINTENANCE OF WAY

The first sentence of the subject under discussion which reads, "When spotting track with a production tamper, what precautions must be taken to prevent leaving hanging ties behind the work?" appears to call for a statement which in itself would be the most natural answer to the entire subject. That is to tamp all of the ties instead of spot surfacing.

The procedure of spot surfacing is an old one, of course, and was carried out for a good many years before the advent of production or any other type of power tamper. It was about the only method that could be used outside of a complete out-of-face surfacing job.

This method of correcting out-of-level locations in track is still used by many railroads even with the use of power tampers. If footage alone is desired, together with a fairly good top surface, spot surfacing is the answer. However, it must be pointed out that spot surfacing, compared with skin raises, will result in hard and soft spots in the track instead of the complete resiliency which results from skin raises where all ties are surfaced. Also, there will be many cases where hanging-tie conditions will not be corrected by spot surfacing.

Track that is spot surfaced does not line as well as track given a complete out-of-face raise, even though it be only a skin lift. In some cases where lining operations are carried out behind spot surfacing, the track will snap back under traffic due to ballast particles being imbedded in the bottom of the ties. This does not occur where an out-of-face raise is made.

When William J. Reade pioneered in 1883, in offering railroads a more effective and less costly method of weed control, they nibbled but resisted what they referred to as a luxury item.

Fifty one years ago I took over. It was still rough going. But in time engineers came to realize that one barrel of killing chemical would do more effective work in one-days-time than fifty laborers could.

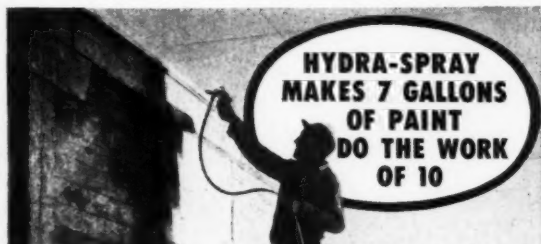
And when the first order calling for a carload of "Herbicide" reached our office, I was dazed and doubtful. I soon discovered that the business of serving railroads with chemical was not one that could be handled as a side line. I dropped everything else and the growth of the business was difficult to keep pace with.

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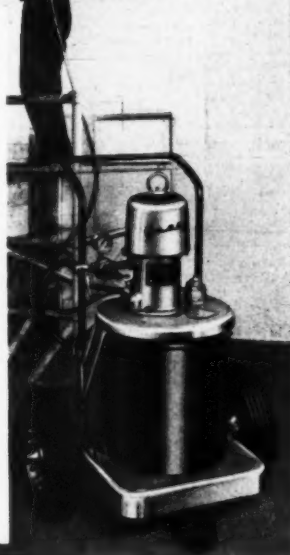
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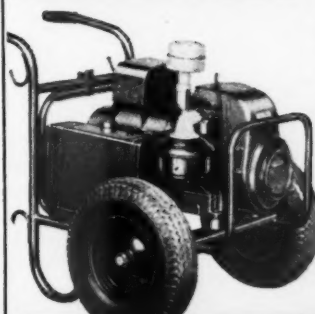


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What's the answer? (cont'd)

In carrying out spot surfacing with the use of a high-production tamper, when an individual sights the one rail and then raises the other rail to it by the use of a level, or where a power tamping jack is working in conjunction with a sighting attachment, all hanging ties will not be corrected. There are many locations where hanging ties prevail where there is no rail deflection.

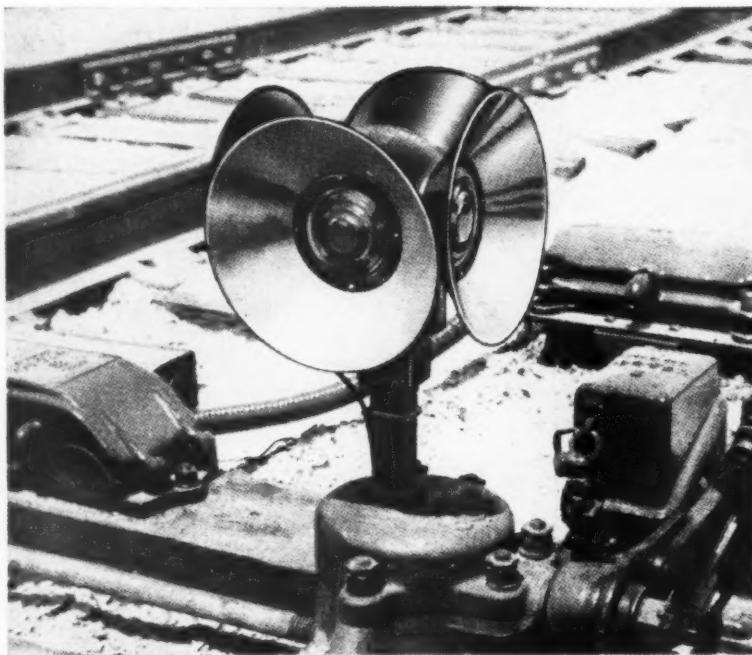
Consequently, even with the most modern methods, hanging ties cannot be eliminated when carrying out a spot-surfacing project.

Spot surfacing will not stand up as long as out-of-face raises. Consequently, the procedure must be repeated at more frequent intervals. This more or less offsets the added production that may be secured by spot surfacing.

By the use of modern machinery, such a tamping power jack with wire attachments, power tampers, track

liners and ballast equalizers, a small gang of five to seven men can make a $\frac{1}{2}$ to $1\frac{1}{2}$ -in skin raise of 3,500 to 5,000 ft per day. This type of surfacing provides complete resiliency in the track and leaves no hard and soft spot locations as is done in spot surfacing. Also, it should last for three or four years or more, depending upon the amount of traffic. The complete resiliency being restored to the track, of course, will provide much better riding conditions than the spot surfacing.

Considering the known fact that a roadmaster with a high-production tamper alone can surface from 30 to 50 miles per year completely out-of-face by making skin raises and, with additional power machinery, can make 45 to 75 miles of skin raises per year with about a 120-day working season, it would appear that such a procedure should be followed. It does not leave any hanging ties and provides better resiliency in the track to give a better riding surface. Further, it is felt that a track given a complete skin lift will require considerable less attention than a track only spot surfaced.



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Mark the loose ties

By L. G. LAWSON
Roadmaster
Canadian National
Melville, Sask.

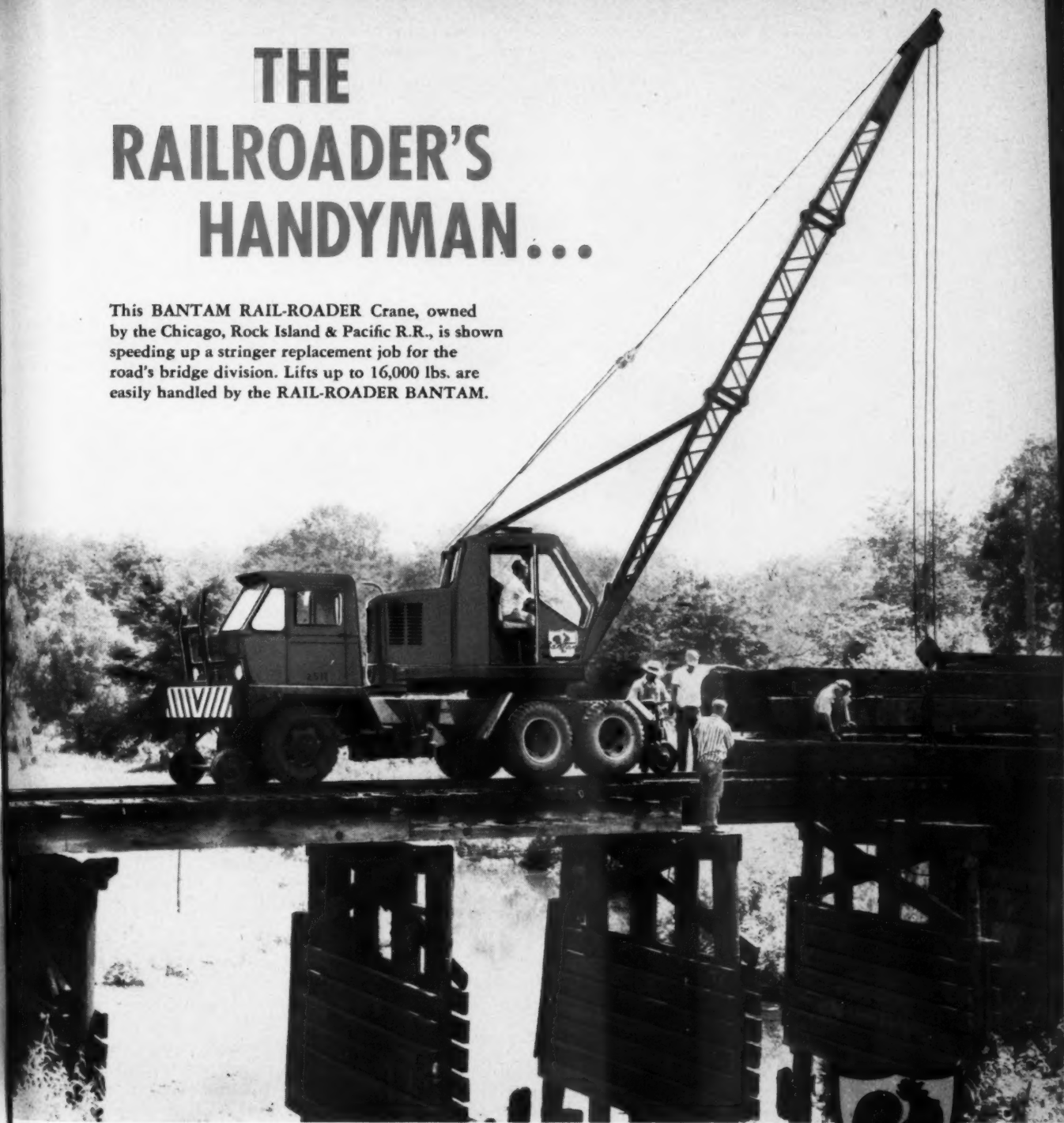
There is a definite place for both spot lifting of track and a light out-of-face lift. An out-of-face lift of not over one inch should certainly be done with cycle tie renewals, if such is done every four or five years. Otherwise there is no way of preventing loose ties. On heavy-traffic lines we can expect our tracks to settle at least one inch during that time. By keeping the lift to a minimum it prevents roads, bridges, platforms, etc. from having to be raised and will assist in the prevention of centerbound track.

Spot lifting on the other hand is necessary for good surface and riding qualities between these out-of-face lifts. In spot lifting the greatest care must be taken to lift and tamp low spots only, so that as little lift as possible will be undertaken. Low spots should be clearly marked ahead of the lift so that only low ties will be tamped.

There is always some settlement after any lift. By marking the ties to be tamped ahead of the lift there

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What's the answer? (cont'd)

should be no loose ties. Spikes should be tapped down tight to the rail ahead of the lift so that ties will be raised evenly and no nipping necessary. This is more important on improved ballast or crushed rock ballast than on ordinary bank-run ballast. The loose tie will "pump" in the old type ballast, but does not do so in the crushed rock ballast. Great care must be taken to

see that there are no loose ties as this is almost the same as having no ties at all.

Mark the ties ahead of the lift that will have to be tamped and then tighten the spikes to the rail by tapping. This is one of the best ways to insure that there will be no loose ties behind the lift.

When spot lifting with a production tamper, a foreman should be right with the machine and clearly mark the starting and finishing points of all spots

to be tamped. Again all spikes must be tapped down snugly to the rail to make certain that all ties stay tight against the rail during the lifting and tamping operations.

Spot in wet climate

By J. C. ROUSE
Roadmaster
Southern Pacific
Albany, Ore.

Several factors have to be considered when deciding whether to make an out-of-face job or to spot up. On branch lines, the speed of trains, the amount of labor allowance, condition of the ties and the future plans of the management for the particular section of track have to be considered.

The condition of the subgrade also is very important. On branch lines, generally speaking, there is insufficient subgrade to hold up a shoulder of ballast, thereby making a high raise out of the question.

In certain sections of the country where there is heavy rainfall, some of the track develops quite a number of soft spots. After three or four years, the track would be raised out of proportion to the width of the subgrade. Hence, out-of-face surfacing instead of spotting is more or less impracticable.

Should the management be considering increasing train speeds, they no doubt would have plans for a regular surfacing job, with due consideration being given to the ballast and subgrade.

In the country with a dry climate, out-of-face surfacing would be more economical.

Whether using a production tamper or any other method to spot track, the spot raised is brought up a little above grade to allow for settlement. For a day or two, there no doubt will be a swinging tie or two at either side of the raise. Using spot tampers, more of the ties towards the end of the raise will be tamped, thus preventing loose ties.



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Make own tests

By W. B. BLIX
Manager Railway Equipment Division
Nordberg Mfg. Co.
Milwaukee, Wis.

It is apparent that the answer to the question of whether to smooth (spot track) or not to smooth but do out-of-



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ENGINE HP (rated at sea level)—150.
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PRECO AUTOMATIC BLADE CONTROL: Another Caterpillar exclusive, optional on the No. 14. Operator selects desired slope on dial. Now transistorized for freedom from maintenance and adjustment, the unit automatically maintains blade slope within $\frac{1}{8}$ in. in 10 ft.

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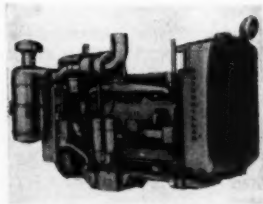
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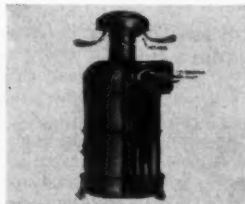
stiffen tire side-walls and reduce tire "roll." Large tires on front end improve machine stability.

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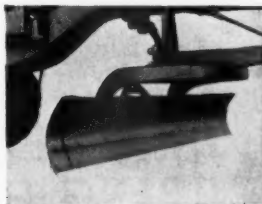
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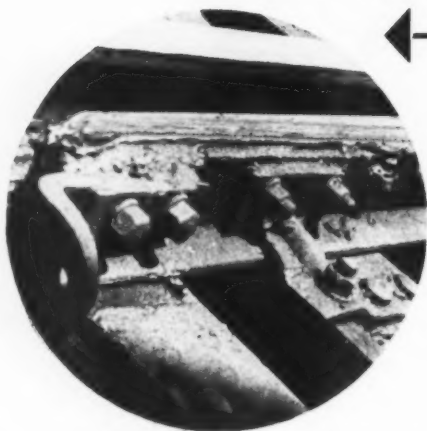
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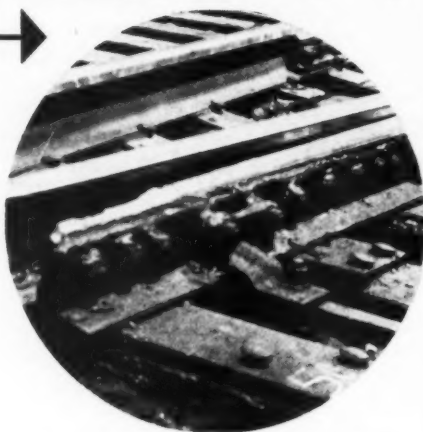
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What's the answer? (cont'd)

face lifts instead, is one which must be answered on each individual railroad. The answer should be based on considerations of economic factors, such as costs of added ballast, production per man-day and, most important, whether or not money is available to actually accomplish all of the out-of-face lifts which track conditions indicate should be made.

As to the question of leaving "hanging" ties behind work in a "spotting" operation, theorizing may be all well and good but a simple practical test is much more certain of producing a real and practical answer.

During our testing of the "smoothing" method, tests were made which gave us, in our opinion, some very interesting information. About a half mile stretch of track was spotted in the normal method with selective tamping of ties, tamping only one end or both ends as required at points where surface was corrected. Another stretch of track was surface corrected by spotting, but ALL ties were tamped out-of-face. Quality of the ride was later checked at intervals and the surface as well as plate looseness were checked at intervals also by visual inspection. We, naturally, have formed some of our own conclusions as a result of these tests and rather than go into them here would like to suggest that those interested make similar tests of their own, perhaps adding an out-of-face lift stretch to the two previously mentioned tests.

Biographical briefs (cont'd)

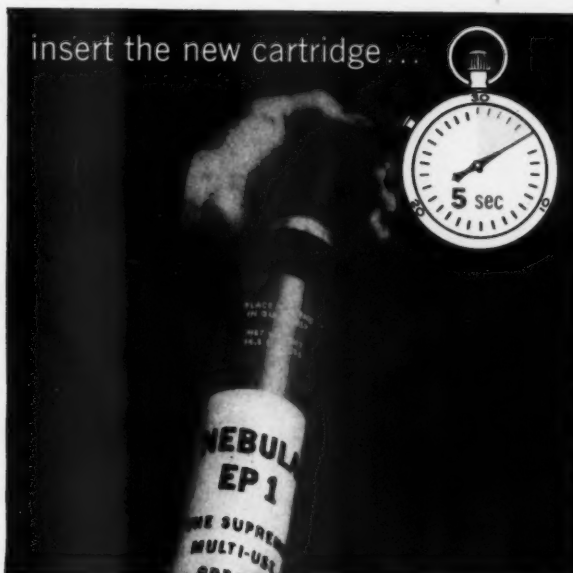
(Continued from page 10)

department as a rodman at Wheeling, where he was later promoted to assistant supervisor in the maintenance department. In 1917 he joined the armed forces and served with the 446th Railroad Battalion and the Transportation Corps in France. Returning to the Baltimore & Ohio in 1919 he was appointed assistant supervisor in the maintenance department at Baltimore. Subsequently he served as maintenance inspector, supervisor, assistant division engineer, assistant engineer and division engineer, serving in the latter position at Grafton, W. Va., and Cumberland, Md. Mr. Exley was promoted to engineer maintenance of way at Baltimore in March 1944. Three years later he was appointed division engineer on the Baltimore division at Baltimore and in March 1949 he became assistant to general manager there.

Remove the head...



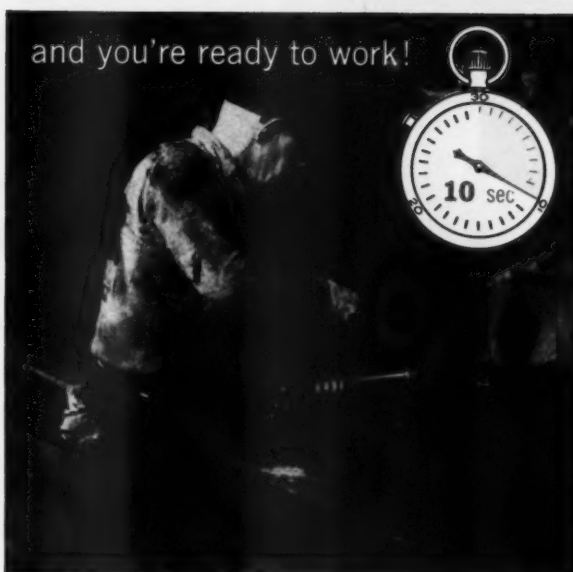
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screw on the head...



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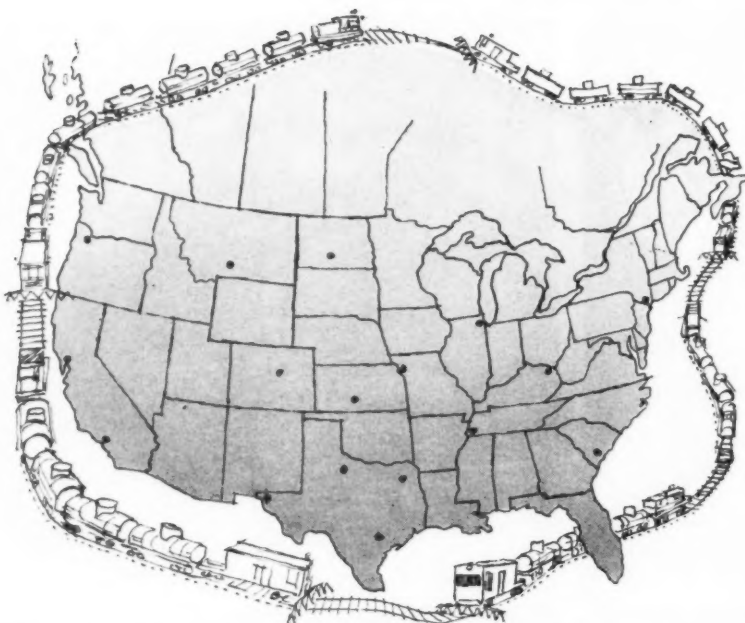
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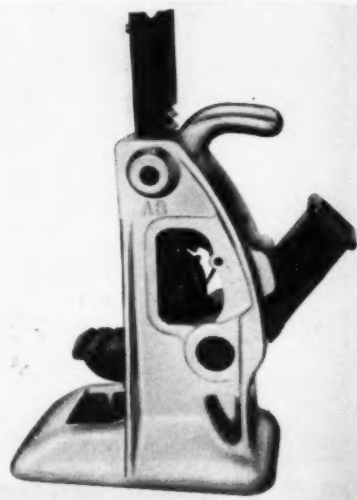
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Products (cont'd)

(Continued from page 54)



High and low lifts with . . .

Track jack

A LIGHTWEIGHT track jack is available that is said to eliminate the necessity for supplying track men with two different kinds of jacks, one for high lifts and another for low lifts. The Model A8, which has been added to the Simplex line of track jacks, has a capacity of 15 tons with a maximum lift of 7 3/4 in and a minimum lift of 2 in. The jack is 15 5/8 in high and has a housing that is made of lightweight aluminum alloy with a heavy-duty horn handle. The full capacity is lifted on a 2 1/2-in by 3 1/4-in toe which has two non-slip grooves.

The A8 is tripped by engaging the lifting pawl in the retaining pawl and completing the downward stroke of the lever. Safe operation at any angle is said to be provided by a rustproof tension spring that is located directly in the back of the lifting and retaining pawls. The jack has thumb guards and trips on both sides to provide extra safety. Templeton, Kenly & Co., Dept. RTS, Gardner Road, Broadview, Ill.

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THE SIZE 834 Reversible Impactool is an air impact wrench that is claimed to give 25 per cent more power and faster run-down than its predecessor, the size 534. Also it is 6 3/4 in shorter, 7 lb lighter and is said to use 25 per cent less air than the older tool. The shorter length and lighter weight are said to make the Impactool easier to use and more maneuverable in cramped quarters and hard-to-get-at nuts. Having an average working speed that is stated to be 850 rpm the machine can tighten nuts on bolts up to 1 1/4 in or loosen them if rusted or frozen.

The wrench is operated by a vane-type motor with a direct drive between it and the hammer. The handle is contoured to

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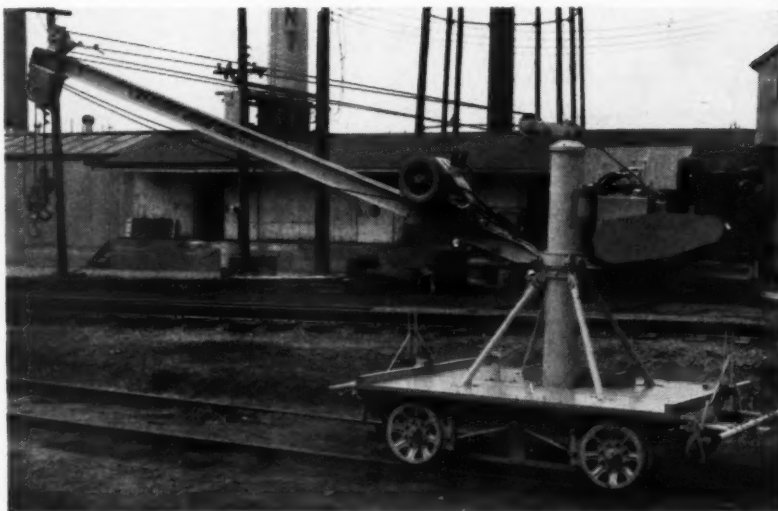
Products (cont'd)

fit the hand and has the trigger on the outside. A built-in chamber is said to hold enough oil to supply the motor with a metered amount of lubrication for four hours of continuous operation. Optional equipment includes an inside trigger handle, spline-drive anvil and swivel-inlet assembly. *Ingersoll-Rand Company, Dept. RTS, 11 Broadway, New York 4, N. Y.*

Power steering for . . .

Track cleaner

STEERING with little operator effort is claimed with a new power steering attachment for the Athey 125-18TC Track Cleaner. It is said to speed maneuvering in confined quarters, in traveling across railroad tracks and in road driving. The attachment is driven from the front power take-off of the engine. It comprises a hydraulic pump with a 5-gpm capacity, a hydraulic steering booster and a lifetime oil filter element. The latter is claimed to require cleaning only once a season under normal conditions. The system uses Type A automatic transmission oil. The attachment can be installed in the factory on new machines or ordered for installing on machines presently in use. *Athey Products Corporation, Dept. RTS, 5613 W. 65th St., Chicago 38, Ill.*



Two lift lines for . . .

Derrick car

LIFTING in connection with trestle work and pole setting can be accomplished, it is claimed, by using the new two-line power lift for the Fairmont W64 Derrick Car. Since the two lines are individually controlled, it is said that the timber or pole can be placed in the desired position without manual balancing. Controlled by one man, the two lines each have a load capacity

of 1500 lb. A single-cylinder engine drives a hydraulic power pack, and the lift is accomplished by means of a hydraulic motor through a speed reducer. The boom angle is changed manually. *Fairmont Railway Motors, Inc., Dept. RTS, Fairmont, Minn.*



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FOREGROUND treated with "Trysben" 200 weed killer. **BACKGROUND** untreated.

New materials for . . .

Weed and brush control

TWO NEW PRODUCTS for vegetation control are being offered by du Pont for railroad use. One, called "Trysben" 200 weed killer, is claimed to be effective for controlling certain broad-leaved, deep-rooted perennials and woody vines, such as bindweed, Canada thistle and trumpet vine. The material, which is based on trichlorobenzoic acid, is applied at rates of 5 to 10 gal per acre to kill established stands. Higher dosages of up to 15 gal are said to provide residual effects to prevent the establishment of new seedlings, giving control of most broad-leaved weeds for one year or longer.

The other new product, called "Dybar" fenuron weed and brush killer, is formulated in tiny pellets for dry application. It is recommended for the control of many species of woody plants east of the Rocky Mountains. It is said to be of value in bindweed control where a non-volatile material is desired, such as, for example, near sensitive crops during the growing season. Dybar is broadcast by hand or machinery or from the air. *E. I. du Pont de Nemours & Co., Dept. RTS, Wilmington 98, Del.*

*The finest wood
preservative*

*costs no more
than others*

USE PENTA

● Take your pick of *three* important reasons why you should preserve wood with PENTA treatment! Any *one* of them should cinch the matter.

1. COSTS NO MORE — Service records show PENTA treatment gives poles, cross ties and other lumber for exposed structure extra long life. Yet PENTA treatment costs no more than ordinary preservatives.

2. WON'T LEACH OUT — Because PENTA is an oil-borne rather than water-soluble preservative, it doesn't leach out, leaving wood vulnerable to rot and termites.

3. CLEAN TO HANDLE — Construction and maintenance supervisors know that workmen handle clean wood faster, more efficiently — and with fewer kicks!

Reichhold is a major supplier of PENTA to the wood industry and to wood users. If you haven't done so yet, investigate this modern method of protecting your lumber investments — write for the name of your nearest Reichhold distributor of PENTA.

REICHHOLD

Synthetic Resins • Chemical Colors • Industrial Adhesives • Phenol
Hydrochloric Acid • Formaldehyde • Glycerine • Phthalic Anhydride • Maleic Anhydride
Sebacic Acid • Ortho-Phenylphenol • Sodium Sulfite • Pentaerythritol
Pentachlorophenol • Sodium Pentachlorophenol • Sulfuric Acid • Methanol
REICHHOLD CHEMICALS, INC., RCI BUILDING, WHITE PLAINS, N. Y.

*Creative
Chemistry...
Your Partner
in Progress*



Announced by RMC . . .

Improved tampers

IMPROVEMENTS to the McWilliams line of tampers have been reported by the Railway Maintenance Corporation. The Spot Tamper is now equipped with a special heavy-duty gasoline or diesel engine. Mechanical stops for the prevention of cylinder damage and an improved pump drive and piping arrangement are stated to reduce maintenance costs on the machines.

The 1959 Model of the Production Tamper is stated to be a more compact unit with increased production. New heavy-duty tamping guns, improved piping and hose arrangements and new style connecting rods are said to increase its production by 20 per cent and to result also in reduced maintenance. The operator is now located in the center of the machine to increase his visibility. The entire machine has been placed under one roof and curtains have been added as standard equipment.

The Jack Tamper can now be equipped, as specified by the customer, with the heavy-duty tamping guns either inboard or outboard the rail. The present machines are also said to be designed for use with any raising or sighting device. *Railway Maintenance Corporation Dept. RTS, Box 1888, Pittsburgh 30, Pa.*

Association News

Northwest Maintenance of Way Club

Tie tampers will be the subject to be discussed at the next meeting of the club, which will be held on March 26 at the usual meeting place, the Midway Civic Club, 1931 University Avenue, St. Paul, Minn.

The subject will be discussed by a panel made up of representatives of the various manufacturers of tampers.

Maintenance of Way Club of Chicago

The next meeting of the club, to be held on March 24, will be featured by a panel discussion of the question, "Are Section Forces Necessary?" The panel will consist of R. G. Simmons, general roadmaster, Milwaukee Road, Chicago; C. F. Parvin, engineer maintenance of way, Pennsylvania, Philadelphia; and A. S. Barr, regional engineer, Pennsylvania, Chicago. The meeting will be held, as usual, at the Hamilton Hotel, Chicago. At the last meeting, held on February 24, a moving picture was presented showing rail laying operations on the C & O.

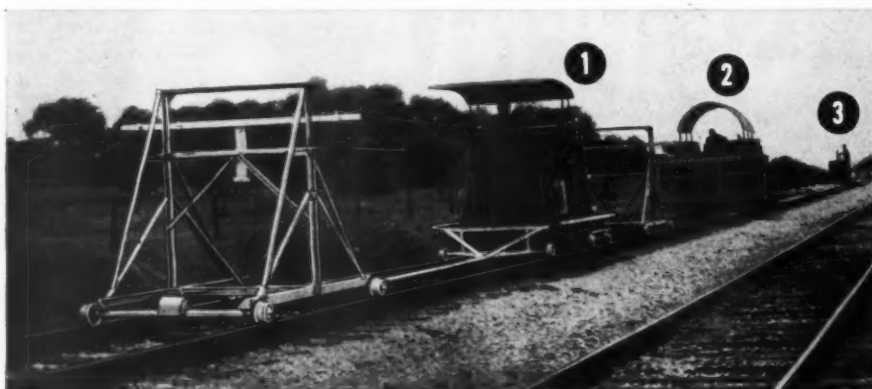
Supply Trade News

AEROQUIP CORPORATION—A new warehouse has been opened by this company in Portland, Ore., according to an announcement by **F. F. Hinkley**, vice-president and general manager of the Western division. Mr. Hinkley states that the warehouse, which is located at 635 N. W. 16th Avenue, Portland 9, will serve railroads and other customers in the Northwest. **Peter S. Naimo**, who has been connected with the customer service department of the Western division, has been appointed manager of the new warehouse.

BUCYRUS-ERIE—**J. V. S. Norton**, assistant export sales manager at South Milwaukee, Wis., has been appointed assistant sales manager, Eastern region, with headquarters in New York.

A. M. BYERS COMPANY—**Robert D. James** has been appointed a field service engineer in the Houston (Texas) division office, according to an announcement by **R. I. Enxian**, manager of wrought iron sales. Mr. James was previously employed by the Allis-Chalmers Manufacturing Company and the General Cable Corporation.

CHIPMAN CHEMICAL—**J. H. D. Ross**, general manager of this company's Canadian sub-



The smoothest Smoothin' team on the tracks!

Built by Nordberg . . . Powered by "Wisconsin"

Here's production-line efficiency for taking the bumps and kinks out of railway tracks! The Wisconsin-powered self-propelled Nordberg Smoothin' unit and five men smoothed and lined 3½ miles of tracks in just 14 hours!

It's rough, tough work. That's why rugged Wisconsin engines are used to drive equipment — to provide the muscle for lifting, tamping, and lining. Air-cooling cuts engine weight; eliminates freeze-ups, anti-

freeze, and other problems; assures fast starts and steady load-lugging power at all times and temperatures. Positive valve rotators and Stellite exhaust valves and inserts increase valve life up to 500% — boost power, lower maintenance costs.

Find out how Wisconsin power-engineering and heavy-duty air-cooled engines can improve the efficiency of your equipment or operation. Write for Bulletin S-237 covering the entire Wisconsin line — 3 to 56 hp.

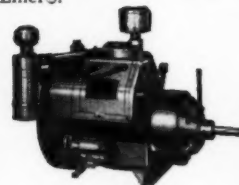


WISCONSIN MOTOR CORPORATION
MILWAUKEE 46, WISCONSIN

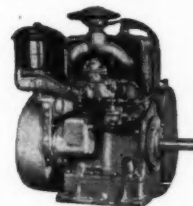
World's Largest Builders of Heavy-Duty Air-Cooled Engines

AS-6247

Smoothin' unit consists of Trak-Surfacers®—propelled by (1) Tamping Power Jack — which locates low spots, raises and tamps ties. Self-propelled (2) Gang Tamper completes tamping. Track is lined with Line Indicator and (3) Wisconsin-powered Trak-Liner®.



NEW MODEL VR4D
56 hp engine propels the Gang Tamper (2) at speeds up to 20 mph and powers two tamping heads with eight tamping bars each.

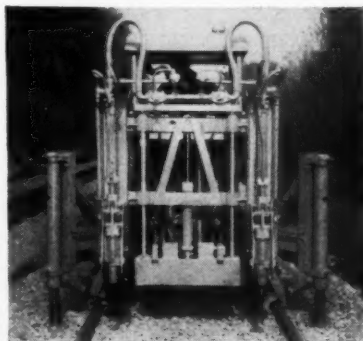


MODEL THD ENGINE
provides power for the Tamping Power Jack (1) and the Trakliner® (3).



**only machine which
will *HOLD GRADE*
for any tamper**

Four fixed-position tamping guns extend under the ties to provide superior ballast compaction. Guns now may be positioned either outside or inside rails.



Machine tamps to grade with no need for over-raising, using the same heavy-duty guns as the McWilliams Multiple Tie Tamper. Speed and ballast compaction are sufficient to hold grade ahead of any multiple tamper. In operation, it clamps to rails . . . raises track with hydraulic lifting cylinders . . . and tamps with four air-powered guns. Machine operates with any type of raising system or device.

McWILLIAMS

Jack
TAMPER

RAILWAY MAINTENANCE CORPORATION • Pittsburgh 30, Pa.

Supply Trade News (cont'd)

sidiary, Chipman Chemicals Ltd., Hamilton, Ont., has been named president of the subsidiary. He succeeds **Warren H. Moyer** who has been elected chairman of the board. Mr. Moyer is president of the parent company with offices at Bound Brook, N. J.

ENTERPRISE RAILWAY EQUIPMENT COMPANY—**Oliver A. Wallace**, sales engineer at Chicago, has been promoted to vice-president—sales with the same headquarters.

KOEHRING—**Caesar Baldasarri** has been appointed railroad distributor for this com-

pany's products on the West Coast. He will handle sales to the Southern Pacific, Western Pacific and Pacific Fruit Express from his address at 420 Market Street, San Francisco, Calif.

MORRISON RAILWAY SUPPLY CORPORATION—A major reorganization of this company and **International Railway Car Leasing Company** has been announced by **Raymond L. Morrison, Sr.**, president of both companies. The new structure is composed of one company and three affiliates. Headquarters of each will be at Buffalo, N. Y. The purpose, according to Mr. Morrison, is to streamline the company and to provide better handling of the leasing of equipment.

The Morrison Railway Supply Corporation will continue to handle the repair of frogs, switches and track, the reconditioning of rails and the purchase and sale of railway rolling stock and track material. **Marcy L. Morrison** has been elected executive vice-president of this company. The three affiliates are:

Morrison Industries, Inc., with **George Kass** as president, has taken over the manufacturing operations of the parent company. It will operate the International Equipment Division under **S. J. Rosen**, vice-president. It has also taken over the International Railway Car plant at Kenton, Ohio, and will operate as the International Car Division under **B. J. Yelin**, vice-president, producing cabooses and "Campcars."

Morrison Plan, Inc., with **Seymour Feldman** as president and **Theodore Jewett** as vice-president, will handle the leasing of new railroad maintenance equipment.

International Railway Car Leasing Company, with **R. L. Morrison, Jr.**, and **Theodore Jewett** as vice-presidents, will handle the leasing of reconditioned revenue freight cars.

RAIL JOINT COMPANY—**R. W. J. Harris**, vice-president of this company, a division of Poor & Co., retired on February 28 after 49 years of service. **P. J. Kirst** has been appointed western sales manager of the Rail Joint Company with headquarters at Chicago. **S. M. Harrison**, vice president of **Rail Joint Reforming Company**, Birmingham, Ala., has been appointed also sales manager there for the Rail Joint Company.

Mr. Harris began his career with the Railway Specialty & Supply Co. in March 1910 and has been continuously employed by Poor & Co. except for a period of military service during World War I.

SCHRAMM—The **J. M. Battalion Company**, 330 Poquonock Ave., Windsor, Conn., has been appointed to represent this company in the sale of its products in Connecticut.

SPERRY PRODUCTS — **Frank U. Hayes** has been appointed president and general manager of this company, according to an announcement by **J. B. Farwell**, board chairman. Mr. Farwell, who has been board chairman, president and general manager for the past 29 years, will remain as board chairman and in a consulting capacity.

Mr. Hayes was formerly vice-president, assistant general manager and director of the Bullard Company, Bridgeport, Conn. Joining the Bullard Company after several years with the Baldwin Locomotive Company, he was appointed sales manager in

A faster, easier way to build-up Frogs and Crossings MANGJET

A smoother, faster iron-powder coated manganese electrode

- For build-up of 11-14% manganese steels
- For welding manganese to manganese or mild steel

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Railroad representatives of

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THE LINCOLN ELECTRIC COMPANY, CLEVELAND 17, OHIO



Frank U. Hayes
Sperry Products



L. P. Lannon
Western Industries

Wipe Out Weeds and Brush

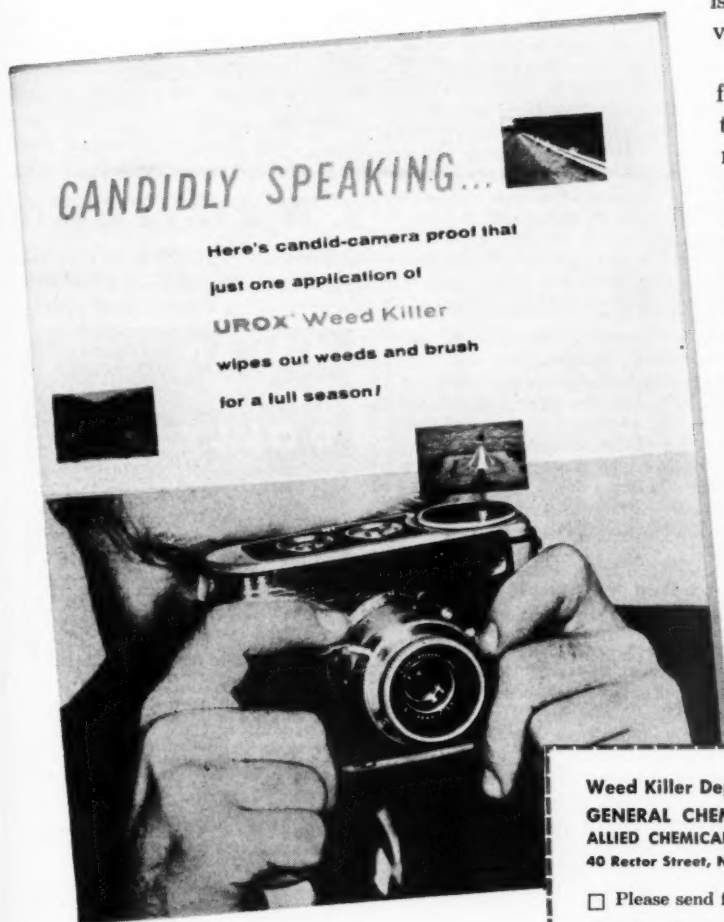
For as long as 8 to 18 months with just one application of **UROX[®]**!

See the candid-camera proof! Mail coupon for free folder. See how Allied Chemical's sensational UROX Weed Killer controls weeds and brush for a longer time . . . at lower cost! See how easy it is to use. How efficiently it solves a wide variety of weed control problems.

For example, you'll see how UROX is effectively used to destroy troublesome vegetation on railroads, highways, farms and in many other non-crop areas. You'll learn why this powerful herbicide is the best method yet for clearing dense weeds and heavy brush along right of ways . . . for handling weed killing jobs in and around railway yards, storage depots, terminals and sidings.

"Candidly Speaking" shows UROX weed and brush control in many separate geographical areas, many different climatic conditions. Unretouched color photos from the field tell the UROX story with greater accuracy than words can convey.

Learn more about this sensational weed killer now! Mail coupon today for free folder and further information on how UROX can help solve your weed-control problems.



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RAILWAY TRACK and STRUCTURES

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ALLIED CHEMICAL CORPORATION
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Title _____

Railroad _____

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DOUBLE-U Rail Anchor

Achuff Railway Supply Co.

5627 Manchester Ave. St. Louis 10, Mo.

Supply Trade News (cont'd)

1947. He became a director in 1950 and was elected vice-president in charge of sales a year later. In 1955 he was appointed assistant general manager.

U. S. BORAX & CHEMICAL CORP. — New equipment has been installed at Fort Worth, Tex., for the purpose of manufacturing liquid weed control materials for railroad use, according to an announcement by this company's Pacific Coast Borax Company Division. The new facility will serve railroads in the southwest and will begin operations in the spring of 1959. Concurrent with the opening of the Fort Worth plant the company's Slaton (Texas) plant will be closed. Operation of the new facility, which will produce several Monobar-Chlorate formulations, will be under the direction of the Agricultural Sales Department of the Pacific Coast Borax Company Division.

The establishment of similar new facilities at Butte, Mont., has been announced by the United States Borax & Chemical Corp. The plant will serve the major railroads of the Northwest.

Ralph Wall has been appointed to the agricultural sales department of the Pacific Coast Borax Company Division of this company succeeding **J. M. Nunn** who has been transferred to the Los Angeles office as a marketing specialist in the agricultural sales department. Mr. Wall will handle sales in Arkansas, Louisiana and Mississippi.

WESTERN INDUSTRIES — **Lawrence P. Lannan**, advertising manager, has been appointed assistant to the president, according to an announcement by **George L. Hudson**, president. Mr. Lannan is a native of Chicago and a graduate of Loyola University. He previously served as a sales engineer for the Western Railroad Supply Company Division and as assistant sales manager of the Electric Parking Gate Division.

Heat-treated trackwork in greater demand

There has been an almost constant increase in the demand for heat-treated rails and trackwork since 1953, according to the Bethlehem Steel Company. This trend, it adds, has continued despite the adverse economic conditions which have affected the railroads for the past two years. Bethlehem reports that its sales of heat-treated trackwork climbed steadily from 4806 tons in 1953 to 8723 tons in 1957. During 1958, a period of declining revenues, 7574 tons were purchased compared to 6758 tons in 1956, generally considered to be a good revenue producing year.

Predicting a favorable outlook for 1959, Bethlehem reported that sales of heat-treated rail for January ran well ahead of the same month last year. The company states it can currently produce 600 tons of heat-treated rails monthly but, upon completion of its facilities at Steelton, Pa., it will have the capacity to produce 1800 tons monthly. This rate of production is expected to be reached by the end of the first quarter of this year.

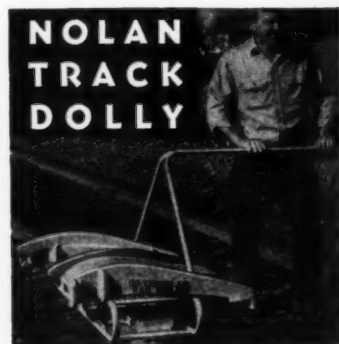


RAIL AND TRACK EQUIPMENT

You can get everything you need for industrial track and crane runways — with one call to your nearest Foster office. Immediate deliveries from the nation's largest warehouse of rails (both new and relaying), switch material, and track accessories. Send for free catalogs and ordering guides.

L. B. FOSTER CO.

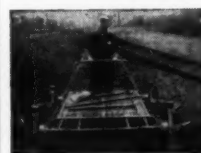
PITTSBURGH 30 • ATLANTA 8 • NEW YORK 7
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You can get rails, ties, supplies, tools, retailers, etc., to the job with money-saving speed and efficiency, when you equip your crews with the Nolan Track Dolly. Built of tubular high-carbon steel. Extremely strong and serviceable. Operator's handle conveniently placed to assure correct balance and full control of heavy loads.

STANDARD DOLLY			
Length	Width	Ht. Above Rail	Weight
50½ in.	15½ in.	6½ in.	88 lbs.
INSPECTOR'S DOLLY			
Length	Width	Ht. Above Rail	Weight
36 in.	14 in.	6 in.	60 lbs.

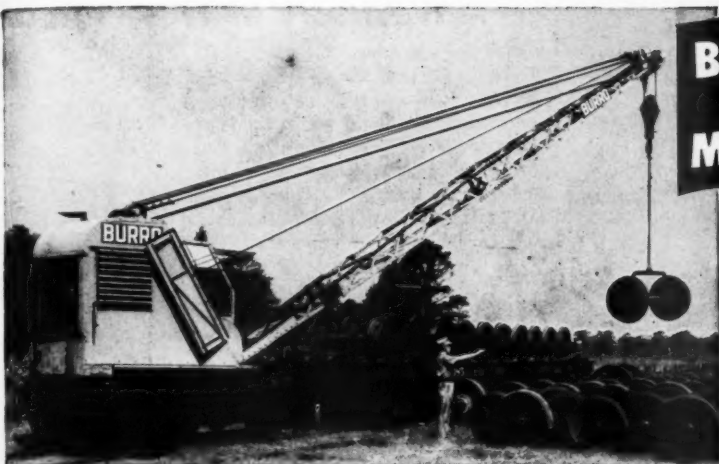
NOLAN TOOL AND SUPPLY CAR



2000 lbs. capacity. All-tubular high-carbon steel construction for safe carrying of ties, rails, supplies, etc. Car breaks conveniently in center into two sections. Platform size 48" x 45" Ht. above rail 6". Weight 140 lbs. complete.

Write for complete railway supply catalog.

THE NOLAN COMPANY
166 PENNSYLVANIA ST., BOWERSTOWN, OHIO



BURRO WORK POWER means... MORE EARNING POWER

Unloading car wheels with a Burro. The Burro moved the flat car into position and will haul it away when wheels are unloaded.

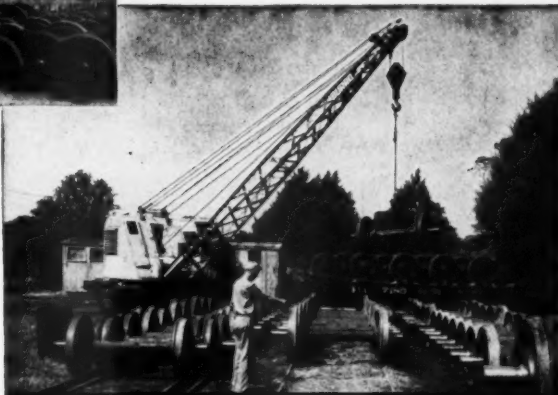
This job—handling wheel assemblies in and out of storage—won't support high costs. That's why a Burro is doing the job.

Any job—on the line, in the yards, or Stores Department—can be done profitably with a Burro because Burros are fast, efficient workers with hook, magnet, tongs, bucket or drag-line. Fast travel speeds and heavy draw bar pull enable the Burro to go to the job in a hurry—and even haul its own cars with it!

Write for Bulletins and more information about Burro cranes. There is no obligation.

Represented In Canada by:

Sylvester Steel Products Co., Ltd., Lindsay, Ontario



CULLEN-FRIESTEDT CO.,
1301 S. KILBOURN AVE. CHICAGO, ILLINOIS

Q AND C CAR STOPS CONSERVE TRACK SPACE



Q & C Car Stops are made in one size suitable for use on all rail sizes found in yards and side tracks. For proper application bolt the two clamp wedges lightly, and drive the car stop casting with a sledge hammer until it grips the rail head securely, then tighten bolts. No rail drilling is necessary.

Order Now for Early Delivery from Stock

OTHER Q and C PRODUCTS:

Deraills
Switch Point Guards
One-Piece Manganese Guard Rails
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Guard Rail Clamps
Gauge Rods
Car Replacers

Snow Flangers and Plows
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Anti-Slip Rail Tongs
Flangeway Brackets
Electric Snow Melters
Gauging Tools
Foot and Heel Guards

Serving Railroads Since 1886.



THE Q AND C CO.



90 West Street
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ST. LOUIS 1



Why buy two machines when *one* does the job? Schramm Standard Pneumatractors are both air compressor and tractor, yet they cost less than competitive compressors alone. Can be equipped with rail car wheels for on- or off-track operation.

NEWEST, MOST MODERN SELF-PROPELLED AIR COMPRESSOR:

Costs less than any maintenance-of-way portable

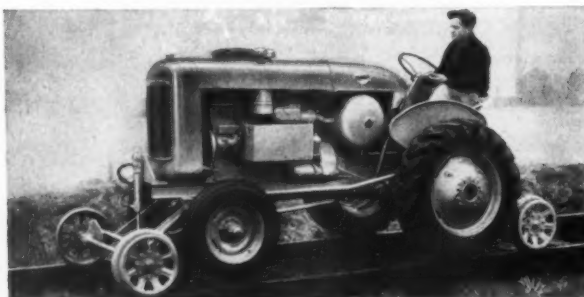
Here's the newest, most modern air compressor you can find—Schramm Pneumatractor. Saves every railroad time and manpower because one man can *drive* it to the job and along with the job. Goes on-track, off-track, under its own power. No towing or pushing. An air compressor with tractor features, it's the "errand boy" of compressors—drives anywhere and powers spike or plug drivers, tows work cars, furnishes compressed air for all maintenance-of-way jobs. It's an all-purpose machine, yet it still costs \$1000 less than other types of adapted self-propelled compressors. You can't find a better buy in air compressors.

Railroads everywhere are making the switch to Pneumatractor. Why don't you? Get all of the information you need by writing to Schramm for your copy of Bulletin RRP-56.

Schramm, Inc.

MANUFACTURERS OF AIR COMPRESSORS

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Schramm Pneumatractor is an on-track, off-track self-propelled air compressor-tractor—all in one.

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Protect the **heart**
of every mile of track...

—install

IMPROVED HIPOWERS

**THE SUPER POWERED
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—with reserve power that
holds rails and joints

TIGHTER, LONGER!



Improved Hipowers maintain constant bolt tension, keep bolts tight, absorb shocks, protect rail ends. These super-powered railway spring washers withstand the terrific stresses and strains, and the constant pounding of main line traffic. Reduce maintenance costs by installing National Spring Washers.

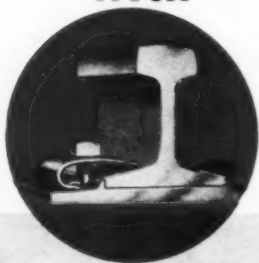
A COMPLETE LINE OF RAILWAY SPRING WASHERS

The NATIONAL LOCK WASHER COMPANY

Serving Industry Since 1886 — NEWARK 5, NEW JERSEY, U. S. A.

STOP Rail Movement Both Ways in CTC
territory on switches, bridges, crossings,
tight and welded rail

with



Compression
RAIL ANCHORS

HOW?

... Because these powerful anchors hold fast evenly against movement in either direction, under severest track conditions. They reduce buckling stresses and hold the expansion at insulated joints.

Considered as standard by many railroads for CTC, Compression Rail Anchors give substantial savings in maintenance on today's high speed track. Use them and see!

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Write, wire or phone for full literature

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